

WOODHAWK WATERSHED MANAGEMENT PLAN

**ENVIRONMENTAL ASSESSMENT
NUMBER MT-068-96-07**

Prepared By

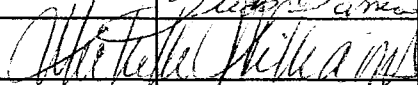
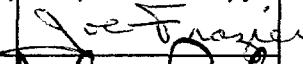
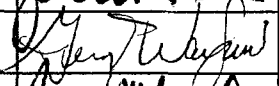
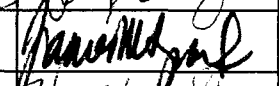
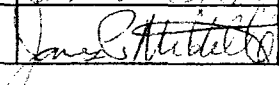
**Bureau of Land Management
Judith Resource Area
Lewistown, Montana**

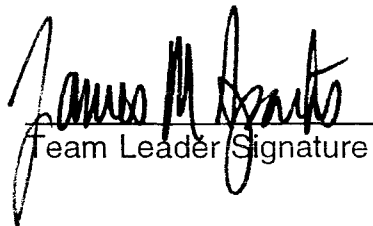
September 1997

ENVIRONMENTAL ASSESSMENT COVER SHEET

EA LOG NUMBER: MT-068-96-07	FILE #:
PROJECT: Woodhawk Watershed Interdisciplinary Management Plan	PROJECT LOCATION: T.23N;R20E, R21E, R22E
APPLICANT: Bureau of Land Management	APPLICANT ADDRESS: Airport Road Lewistown, MT 59457
BLM OFFICE: Judith Resource Area	BLM Phone #: (406) 538-7461

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 Team Leader Signature


 Ecosystem Mgt. Spec.
 Title

10/22/97
 Date

DECISION RECORD/FINDING OF NO SIGNIFICANT IMPACT

EA LOG NUMBER: MT-068-96-07	FILE #:
PROJECT: Woodhawk Watershed Interdisciplinary Management Plan	PROJECT LOCATION: T.23N;R20E, R21E, R22E
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I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined that the proposed action/preferred alternative will not have any significant impacts on the human environment, and that an EIS is not required. I have determined that the proposed action/preferred alternative is in conformance with the Judith/Valley/Phillips and West Hiline Resource Management Plans. It is my decision to implement the proposed action/preferred alternative.

Remarks: _____

Authorized Official: Chuck Otto Date: 3-13-98

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**WOODHAWK WATERSHED
INTERDISCIPLINARY MANAGEMENT PLAN
ENVIRONMENTAL ASSESSMENT
MT-068-96-07**

I. INTRODUCTION

A. LOCATION AND TOPOGRAPHY

The Woodhawk area is located 20 miles northeast of Winifred, Montana in northern Fergus County (see general location map on page 2). It contains 1767 acres of state land, 10,652 acres of private land and 25,966 acres of public land (see management area map on page 3). The boundary of the area is formed by the Upper Missouri National Wild and Scenic River (UMNWSR) to the north and east, the ridge between the Woodhawk and Two Calf Creek watersheds to the south, and the existing Woodhawk grazing allotment boundary to the west. The primary watershed in the Woodhawk area is the Missouri River. However, there are two distinct divisions or drainage areas. Woodhawk Creek, a secondary watershed or hydrologic unit that flows into the Missouri River, is formed by a network of relatively short ephemeral channels. The remainder of the area is drained by a series of ephemeral channels that empty directly into the Missouri River.

The topography is very rough and broken (Missouri Breaks). The land has undergone active geologic erosion due to a diversion of the Missouri River from its former course in the Milk River drainage which occurred near the end of the last ice age nearly 10,000 years ago. Some significant faulting is also present.

The floodplain of the Missouri River is relatively narrow and ends abruptly at the steep surrounding hills. The upland areas are dissected by narrow drainages with fast falling gradients. These drainages eventually flow into Woodhawk Creek or directly into the Missouri River. Elevation in the area varies from 3200 feet in the west to 2200 feet where Woodhawk Creek enters the river.

B. BACKGROUND AND NEED FOR THE PROPOSED ACTION

An allotment management plan (AMP) was prepared for the Woodhawk Allotment in 1970. The Missouri Breaks Environmental Impact Statement (EIS) (1979) listed the Woodhawk Allotment as having an implemented AMP with a deferred rotation grazing system. The West Hiline Resource Management Plan (RMP) (1988) and Judith Valley Phillips RMP (1992) each specify land use plan decisions and objectives to be implemented in the allotment. The West Hiline RMP addresses management of BLM land within the designated corridor of the Upper Missouri National Wild and Scenic River (UMNWSR), while the Judith Valley Phillips RMP addresses management of BLM lands outside of the corridor. The UMNWSR Management Plan Update (1993) specified that the AMP for the Woodhawk area should be revised to enhance riparian area condition.

An interdisciplinary evaluation of the Woodhawk AMP was completed in 1994. The team found

WOODHAWK MANAGEMENT AREA - GENERAL LOCATION

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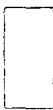
BLM



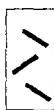
STATE



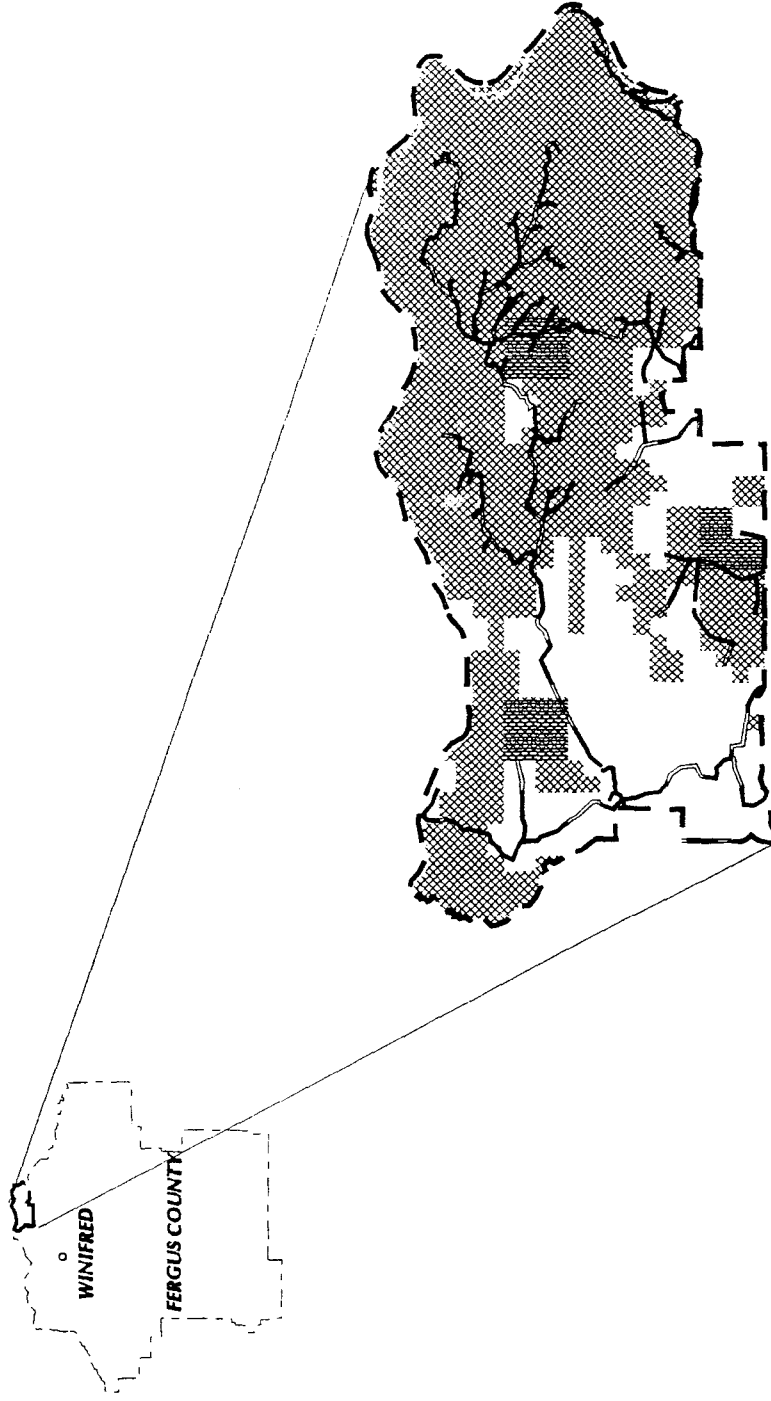
PRIVATE



MANAGEMENT AREA
BOUNDARY



ROADS AND TRAILS



WOODHAWK MANAGEMENT AREA

LEGEND



BLM
25,966 ACRES



STATE
1,767 ACRES



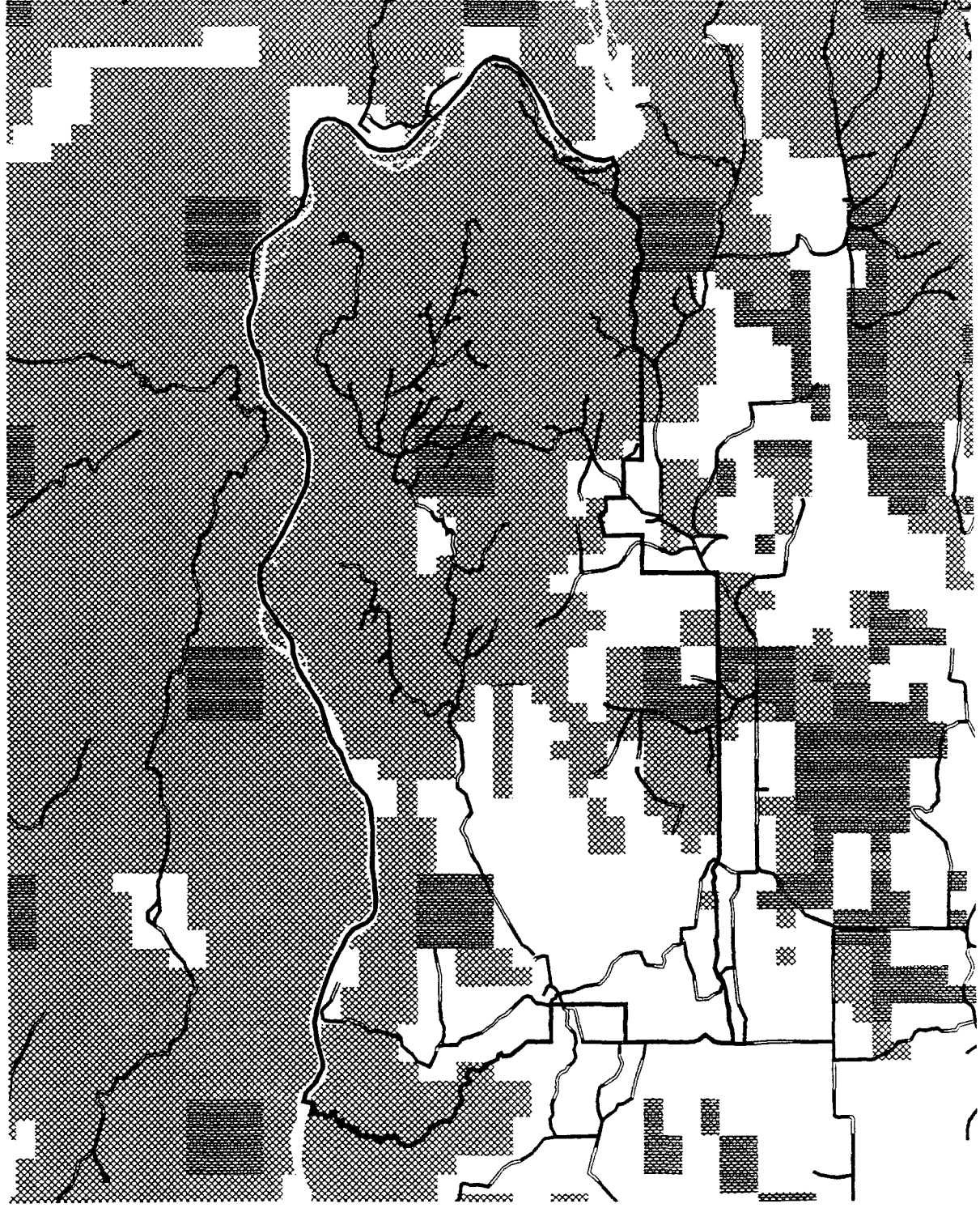
PRIVATE
10,652 ACRES



MANAGEMENT AREA
BOUNDARY



ROADS AND TRAILS



that: 1) land use plan objectives for riparian areas were not being met along the Missouri River, 2) there were conflicts between recreationists and livestock in riparian areas along the river, 3) livestock distribution was poor due to inadequate management practices and 4) many areas in the allotment are unsuitable for grazing due to topography.

In early 1995, an interdisciplinary team was formed to write a new management plan for the Woodhawk watershed that would incorporate current land use plan objectives and decisions and address the findings of the 1994 evaluation team. The team included interdisciplinary staff from the BLM, the grazing permittee, the ranch manager for the grazing permittee and a biologist from Montana Department of Fish Wildlife and Parks.

C. CONFORMANCE WITH LAND USE PLANS

The proposed action is in conformance with the Judith Valley Phillips and West Hiline RMPs and the Missouri Breaks EIS.

D. ISSUES

The BLM interdisciplinary team (ID team), Montana State Fish Wildlife and Parks personnel and the grazing permittee identified the following core issues to be addressed in the development and analysis of the proposed and alternative action(s):

Issue #1

Lack of riparian area vegetation, regeneration, and successional development (especially woody species) along the UMNWSR in the planning area.

Livestock that graze in the planning area tend to concentrate along the UMNWSR during the hot season. This livestock use, particularly grazing and trampling, along with other factors such as ice damage, drought, low water, wildlife use and hydrologic influence from upstream dams has impacted cottonwood age class development and replacement, other woody species regeneration and riverain/riparian ecosystem successional development.

Issue #2

Noxious plants, including leafy spurge and Russian knapweed, have become established in the planning area. Noxious plant populations are expanding along the UMNWSR and may be expanding to upland sites.

There has been no chemical control effort along the river since 1992. Existing populations along the river have expanded and new infestations have become established from seeds transported by the river from upstream sources, vehicles, livestock, wildlife, and human activity. Possible expansions into upland locations are primarily due to seed transport by livestock, wildlife and vehicles.

Issue #3

Some upland areas in the planning unit, particularly the flats, benches and areas near water sources, have vegetative communities in early and mid seral status. Successional status appears to be static, or in some instances degrading.

Livestock that graze in the uplands are poorly distributed and tend to concentrate on gentle to moderately sloping terrain and/or areas close to water sources. Opportunities to improve cattle

distribution and grazing patterns in the uplands are limited due to steep slopes, poor options for fence placement, lack of water (all potential sites are currently developed), poor water quality in some existing reservoirs, and potential over allocation of forage.

Issue #4

There are conflicts between livestock and recreationists and in some cases between recreationists on the UMNWSR and to some extent in the uplands.

Many river floaters have expressed that they do not want livestock with the resulting manure and flies in Woodhawk Recreation Area and other undeveloped camping areas (usually riparian areas).

Some hunters feel that concentrations of livestock in the uplands during the big game hunting season affects the quality of the hunt and reduces the chance to harvest game.

Recreationists may harass or disturb livestock and leave gates open. In the uplands this is more prevalent during the big game hunting season. Livestock may be wounded or killed from a misplaced bullet. In addition, there is some concern that there are too many outfitters in the planning area.

Issue #5

Most of the soils in the planning area are highly susceptible to erosion. Some accelerated erosion is occurring.

Much of the accelerated erosion occurring in the planning area is due to new roads being created by continual vehicular traffic. However, most can be attributed to increased surface runoff due to farming activity on private lands, livestock trails, lack of vegetative ground cover and road maintenance.

Issue #6

14.50 miles of Woodhawk Creek are functioning, but are at risk to degradation and 1.50 miles are nonfunctioning.

Polygons 1, 2, 3, 5 and 6 were found to be properly functioning, but are at risk to degradation due to lack of vegetative communities with a deep, binding root mass, high amounts of human induced bare ground, and significant active lateral cutting of the streambanks. Polygon 4 was found to be nonfunctioning due to lack of vegetative communities with a deep binding root mass, high amounts of human induced streambank alteration and bare ground, and significant active lateral cutting of streambanks.

Issue #7

The Woodhawk Bottom Recreation Area has unsafe (hazard) trees in the camping areas, unsanitary conditions from existing pit toilets that release contents into the water table, poor all weather vehicular access, no accessible facilities (disabled people) and no potable water.

Issue #8

Cultural and paleontological resources, primarily sites located within the UMNWSR corridor are experiencing impacts and/or damage from natural erosional processes, livestock, recreationists, and lack of protection efforts. In addition, there is a lack of information of cultural resources in the area.

With the exception of the Nelson (24FR402) and Middleton (24FRP9) homesteads, the remaining historic and prehistoric cultural resources, within the Woodhawk area are presently being affected by either natural processes (erosion, weathering, etc.), livestock trampling, or the lack of protection measures. In addition, there have been some instances of effects due to human activity, primarily to historic properties.

Specifically, prehistoric sites, 24FR53 and 24FR650, are being severely impacted by cutbank erosion from the Missouri River (high water and ice-gouging). The remaining recorded and unrecorded prehistoric sites, located throughout the Woodhawk area, are being impacted by natural erosion and cattle trampling, to an unknown degree at the present time.

The Nelson and Middleton homesteads, are presently fenced and have been reroofed, affording some degree of protection and stabilization. Unless maintenance and rehabilitation of the structures is maintained, effects can be anticipated to occur in the future.

Issue #9

Big game habitat is being impacted due to excessive roads and degraded vegetative condition forcing big game to use private agricultural lands which reduces the recreational opportunities on the public land.

Roads are a significant problem for big game. Hunters can access almost every point and overlook in the area by vehicle which greatly reduces hiding and escape cover for the animals and increases stress. Where block management has been initiated, it has helped wildlife security by closing unnecessary roads. Hunting pressure in the breaks is also greater than in the past and the area has gained recognition by both resident and nonresident hunters. Predator populations are also increasing. Coyotes and eagles can have a major impact especially on antelope fawns. Mountain lions in the breaks could also be impacting mule deer populations.

Upland vegetation can be critical to wintertime survival for big game. If the quality of sagebrush and other browse species is poor, then antelope and deer will not have the quantity and quality they need to overwinter. The sagebrush is crucial to maintaining healthy big game populations.

Issue #10

Key T&E and special status species need to have habitat available and protected so that the animals can be present for now and in the future.

There are potentially three threatened or endangered species in the planning area including pallid sturgeon, bald eagle, and peregrine falcon. Additionally, several more special status species occur with no federal status, but the BLM must provide management to prevent them from being listed. While some animals are present, current planning is not managing for them or their essential habitats.

II. PROPOSED ACTION AND ALTERNATIVES

A. INTRODUCTION

The Bureau of Land Management (BLM) ID team, with input from permitted users and state agencies, developed three alternatives for the Woodhawk Watershed that address the issues described in Chapter 1. There is also one alternative that represents continuation of existing management for livestock grazing, but not implementation of current management decisions. The alternatives represent a range of possible land uses and future management direction for the area.

Alternative 1 is the no action/current management alternative and represents continuation or in some instances implementation of present management decisions in the Woodhawk Watershed. Under this alternative, the existing AMP would be implemented for livestock grazing.

Alternative 2 represents more stringent natural resource protection.

Alternative 3 represents the existing livestock management without enforcement or implementation of the existing AMP. All other actions under this alternative are the same as alternative 1.

Alternative 4 represents the preferred alternative.

B. ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

Alternatives proposing exclusive production or protection of one resource at the expense of other resources were considered but were not analyzed because this would violate BLM's legal mandate to manage public land on a multiple use and sustained yield basis. This eliminated alternatives such as closing all BLM land to off-road vehicles or not managing riparian areas, etc.

C. MANAGEMENT COMMON TO ALL ALTERNATIVES

CULTURAL RESOURCES MANAGEMENT

All alternatives will provide for the protection of cultural resources and traditional cultural values. Cultural resources will be given full consideration in all management decisions. All actions which may impact cultural resources will comply with the National Historic Preservation Act of 1966, as amended and implemented by 36 CFR 800. Specific proactive cultural resource management actions would be as follows:

Nelson and Middleton Homesteads

The following actions would be taken by BLM personnel at the Nelson and Middleton Homesteads:

1. Update existing records.
2. Seek determination of eligibility for the Middleton Homestead for inclusion on the National Register of Historic Places.
3. Develop a Cultural Resource Project Plan(CRPP) for significant sites.
4. Take necessary actions to prevent theft and vandalism.
5. Interpret historic values at both homesteads.

6. Maintain enclosures as needed to protect historic values.

Other Previously Recorded Historic Properties or Sites

The following actions would be taken by BLM personnel at the Lewis and Clark campsite at Woodhawk, Deweese Homestead and Frizzell Homestead:

1. Class III inventory.
2. Seek determination of eligibility for the Lewis & Clark Campsite(Woodhawk) ,the Deweese, and the Frizzell Homesteads for inclusion on the National Register of Historic Places.
3. Assess effects and provide for necessary mitigation measures as needed.
4. Place a Lewis and Clark location sign in the general area of the camp site at Woodhawk.

Currently Unknown Historic Properties or Sites

The following actions would be taken within the floodplain and adjacent terrace of the Missouri River or at sites as discovered during the course of conducting normal duties:

1. Class III inventory - by contract or agreement, within the floodplain and adjacent terrace of the river.
2. Class III inventory - by BLM cultural resource personnel at sites that are discovered while conducting normal duties.
3. Allocate management use categories.
4. Seek determination of eligibility for inclusion on the National Register of Historic Places.

Previously Recorded Prehistoric Sites

The following actions would be taken at Hart Spring and sites 24FR53 and 24 FR650:

1. Class III inventory at Hart Spring, 24FR53, and 24FR650 - by BLM cultural resource personnel.
2. Seek determination of eligibility for Hart Spring and sites 24FR 53 and 24FR650 for inclusion on the National Register of Historic Places.
3. Allocate management use categories.
4. Provide emergency protection at Hart Spring - Enclose site with fence (contract).
5. Assess effects at 24FR53 and 24FR650 and provide necessary mitigation measures as needed.

Other Previously Recorded Prehistoric Sites

The following actions will be taken at other previously recorded prehistoric sites listed in Appendix E:

1. Update existing records.
2. Seek determination of eligibility for inclusion on the National Register of Historic Places.
3. Allocate management use categories.
4. Assess effects and provide for mitigation measures as needed.

Currently Unknown Prehistoric Sites

The following actions will be taken within the floodplain and adjacent terraces of the Missouri River or at sites as discovered during the course of conducting normal duties:

1. Class III inventory - by contract or agreement, within the floodplain and adjacent terrace of the river.
2. Class III inventory - by BLM cultural resource personnel at sites that are discovered while conducting normal duties.
3. Allocate management use categories.
4. Seek determination of eligibility for inclusion on the National Register of Historic Places.
5. Assess effects and provide for mitigation measures as needed.

D. ALTERNATIVE 1 - NO ACTION/CURRENT MANAGEMENT

This alternative represents implementation or in some instances continuation of present management direction and/or decisions for public lands in the Woodhawk Watershed consistent with the West Hilline and Judith Valley Phillips RMPs and the 1970 Allotment Management Plan.

MOTORIZED VEHICLE MANAGEMENT

Motorized vehicular traffic on BLM land would be restricted yearlong or seasonally to designated roads and trails or closed in specific areas to protect the wilderness values in the WSA, vegetation and soils to maintain watersheds and water quality, reduce user conflicts and reduce harassment of wildlife and/or provide habitat security (See map on page 10).

Roads Open Yearlong

19.9 miles of road in the watershed would be open to motorized vehicular travel on a yearlong basis. The roads in this category include the: 1) Woodhawk Trail from the intersection with the Two Calf Road to the intersection with private land at T.23N., R.20E., NESE Section 14 and 2) Sunshine Ridge Road from the intersection with Woodhawk Trail 3) Deweese Ridge Road

Roads with Seasonal Restrictions

18.7 miles of road in the watershed would be opened to motorized vehicular travel but would have seasonal restrictions to protect resource values, reduce user conflicts, prevent harassment of wildlife, provide habitat security and/or ensure visitor safety. The roads in this category include the: 1) Road beginning approximately 1 mile east of Bar OK Ranch in T.22N., R.20E., NW Section 1 2) Middleton Ridge Road and 3) all of the spur roads in the watershed other than those mentioned above. These roads would be seasonally restricted (closed to motorized vehicle traffic) on an annual basis from September 1 to December 1.

Roads with Yearlong Closure

4.1 miles of road in the watershed would be closed to all motorized vehicle use to protect resource values in the Woodhawk WSA. The roads in this category include the spur roads into the WSA.

Implementation

1. Roads open yearlong and roads with seasonal restrictions would be numbered in

MOTORIZED VEHICLE MANAGEMENT, ALTERNATIVES 1 and 3

LEGEND



ROADS OPEN
YEAR ROUND
19.9 MILES

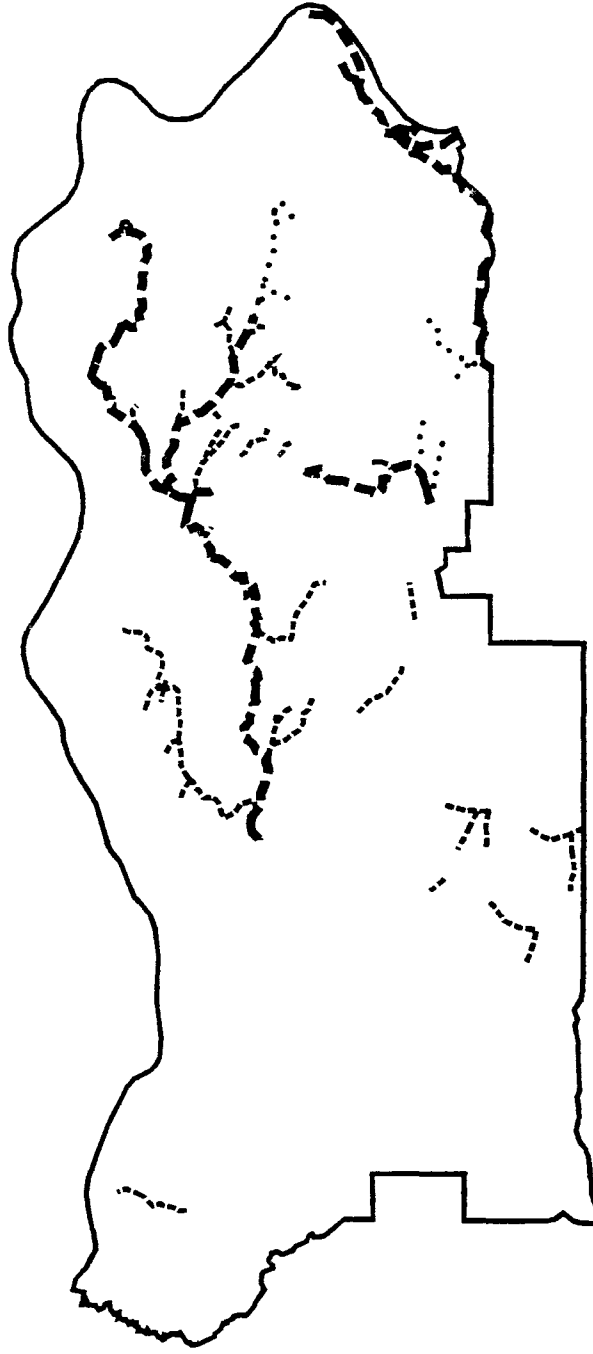


ROADS WITH
SEASONAL RESTRICT-
ION
(SEPT 1 - NOV 30)
18.7 MILES



ROADS CLOSED
4.1 MILES

ONLY ROADS
WITH FEDERAL
SURFACE OWNER-
SHIP SHOWN



accordance with the Lewistown District Travel Plan.

2. All roads not numbered in accordance with the Lewistown District Travel Plan would be considered seasonally restricted.
3. Roads with seasonal restrictions would have small signs that indicate the appropriate restricted date.
4. The spur roads into the WSA would be signed as "closed".
5. Game retrieval would be permitted on seasonally restricted roads.
6. No off-road (cross-country) motorized vehicle travel would be permitted except for administrative purposes.
7. Administrative use of seasonally restricted roads would be permissible.
8. Vehicular access for camping would be permissible within 100 yards of roads open yearlong or during the open period on seasonally restricted roads. Exceptions could be granted on a case-by-case basis through the use of a special permit.

WOODHAWK BOTTOM RECREATION AREA

The current facilities at the recreation area would be maintained, including a pit toilet at the upper campground and a pit toilet at the lower campground. There would continue to be a minimally developed campsite at each of these locations, but cooking/warming units and picnic tables would not be provided. The fence and water gap would remain and would be maintained by the grazing permittee. The campgrounds would be mowed on occasion and hazard trees would be cut for firewood. The existing road and crossing at Woodhawk Creek would be maintained as needed.

HUNTING OUTFITTER MANAGEMENT

Special permits and allocations would not be available for outfitters and guides. Special use permits for outfitting would not be limited and would be available at the discretion of the area manager. Between 3 and 5 outfitters would be expected to be active in the watershed.

Outfitters would be required to comply with off road vehicle restrictions and off road game retrieval would be permitted.

By applying to the BLM and paying an established fee, an outfitter could be granted an "exclusive" camping area. An "exclusive" camping area is one that another outfitter could not utilize for camping. Approval of this type of arrangement would not grant the outfitter any right or authority to preclude or interfere with use of public lands by any party.

Only certified weed seed free hay or feed would be fed to pack or riding animals.

NOXIOUS PLANT MANAGEMENT

Control efforts would be focused primarily on leafy spurge and Russian knapweed. Biological

controls would be emphasized, particularly in riparian areas where using chemicals can be environmentally and economically impractical.

New and existing infestations of leafy spurge and Russian knapweed and new infestations of other Category 1, 2 or 3 noxious plants within the floodplain of the Missouri River would be combated with biological control agents. Emphasis and priority for agent dispersal would be given to infestations on islands.

Occasional chemical control would take place, but only with legal, effective, environmentally safe agents that would not impact riparian vegetation.

PALEONTOLOGICAL RESOURCES MANAGEMENT

Major paleontological resources of scientific interest would be protected. Permits would be issued only to qualified paleontologists to work on BLM land. Casual invertebrate fossil specimen collectors would not be required to obtain a permit.

LIVESTOCK GRAZING MANAGEMENT

1. General Description

The 1970 Allotment Management Plan (AMP) would be implemented. This AMP prescribes grazing uplands and riparian areas in a 2 pasture double-deferred grazing system. No grazing management guidelines would be implemented. A short fence would be constructed but no other rangeland management projects would be needed to implement the 1970 AMP. The acreage and carrying capacity of all pastures in the watershed would be as follows:

Pasture	BLM Acres/AUMs	State Acres/AUMs	Private Acres/AUMs	Uncontrolled Acres/AUMs	Total Acres/AUMs	Percent Public AUMs
East	13602/1291	640/94	15/3		14257/1388	93%
West	8878/1169	480/107	2887/597	14/3	12259/1876	62%
North River	2997/266	575/70	1824/307		5396/643	41%
Total	25477/2726	1695/271	4726/907	14/3	31912/3907	70%

The remainder of the carrying capacity on BLM land in the watershed is intermixed with private crop land. There are 29 AUMs on 160 acres of this type of land. Permitted or "authorized" use in all of the pastures in the watershed would be as follows:

Pasture	Livestock #	Begin Period	End Period	% Public AUMs	AUMs
Custodial	NA	March 1	Feb. 28	100%	29
N. River	13 Horses	May 1	Oct. 31	41%	32
N. River	150 Cattle	June 1	Sept. 24	41%	234
East & West	26 Horses	May 1	Oct. 31	75%	117
East & West	744 Yearlings or 516 cattle	May 1	Oct. 31	75%	3348 (1009 Temp) 2341 (2 Not Sched.)

2. Grazing Method/Pasture Rotation

Only the east and west pastures would be included in the grazing system (See map on page 14). Grazing in the watershed would take place according to the following rotational schedule:

Pasture	Livestock #	Year 1	Year 2	Year 3	Year 4
East	26 Horses and 744 Yearlings or 516 Cattle	05/01 - 07/15	05/01 - 07/15	07/15 - 10/31	07/15 - 10/31
West	26 Horses and 744 Yearlings or 516 Cattle	07/15 - 10/31	07/15 - 10/31	05/01 - 07/15	05/01 - 07/15
N. River	13 Horses	05/01 - 10/31	same as yr 1	same as yr 1	same as yr 1
N. River	150 Cattle	06/01 - 09/24	same as yr 1	same as yr 1	same as yr 1
Custodial	NA	03/01 - 02/28	same as yr 1	same as yr 1	same as yr 1

Cattle grazing along the river would not be required to be rotated into the deferred pasture until

LIVESTOCK GRAZING MANAGEMENT, ALTERNATIVES 1 AND 3

LEGEND



BLM
25,966 ACRES



STATE
1,767 ACRES



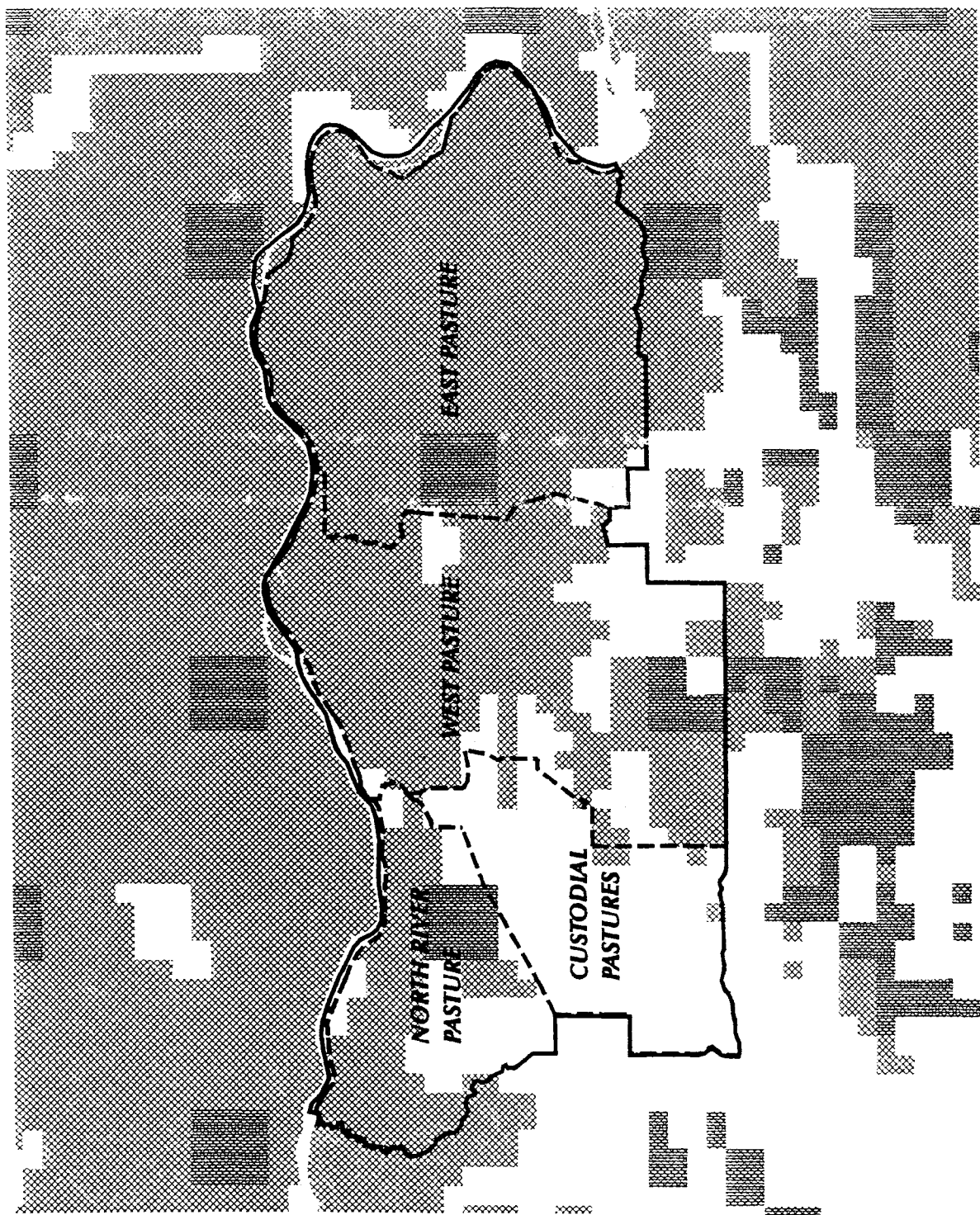
PRIVATE
10,652 ACRES



MANAGEMENT AREA
BOUNDARY



PASTURE
BOUNDARIES



August 15.

The sequence of rotation identified above would be repeated continuously. The dates indicated on the schedule would be a guide and could be varied with weather and forage conditions, but the sequence of movements would have to be followed. Movements would be governed by the condition of the livestock, but would not vary by more than 15 days from the date set in the rotation schedule. Cattle would not be turned into the East and West pasture until May 1 or the North River Pasture until June 1. Horses would not be turned into the East, West or North River Pasture prior to May 1.

3. Grazing Management Guidelines and Stipulations

Stock would be moved when an average stubble height of three (3) inches is left on green needlegrass and western wheatgrass and/or five (5) inches on bluebunch wheatgrass at the key areas.

4. Rangeland Management Projects

A short fence (approximately 1 mile) would be required to separate the east and west pastures along the river bottom in T.23N., R.21E., S1/2 Sections 4 and 5. The fence would be constructed with 3 barbed wires and a smooth bottom wire and would be built to BLM specifications.

E. ALTERNATIVE 2

This alternative would provide the most rapid and greatest overall amount of improvement to riparian and upland vegetative conditions while providing proactive cultural resource management, but would provide the least opportunity for centralized/developed recreational opportunity.

MOTORIZED VEHICLE MANAGEMENT

Motorized vehicular travel on BLM lands within the entire watershed would be restricted yearlong or seasonally to designated roads and trails or prohibited on specific roads to protect the resource values in the wilderness study area, vegetation and soils to maintain watershed function, reduce user conflicts, reduce harassment of wildlife and livestock and/or provide habitat security (See map on page 16).

Roads Open Yearlong

11.3 miles of road in the watershed would be open to motorized vehicular travel on a yearlong basis. The roads in this category include: 1) Woodhawk Trail from the intersection with Knox Ridge Road to the intersection with private land at T.23N., R20E., NESE Section 14 and 2) Sunshine Ridge Road from the intersection with Woodhawk Trail.

Roads with Seasonal Restrictions

6.3 miles of road in the watershed would be open to motorized vehicular travel but would have seasonal restrictions to protect resources, reduce user conflicts, prevent harassment of wildlife and livestock, provide habitat security or ensure visitor safety. The roads in the category include the Woodhawk Bottom Road which would be open from April 15 to November 30 annually.

MOTORIZED VEHICLE MANAGEMENT, ALTERNATIVE 2

LEGEND



ROADS OPEN
YEAR ROUND
113 MILES

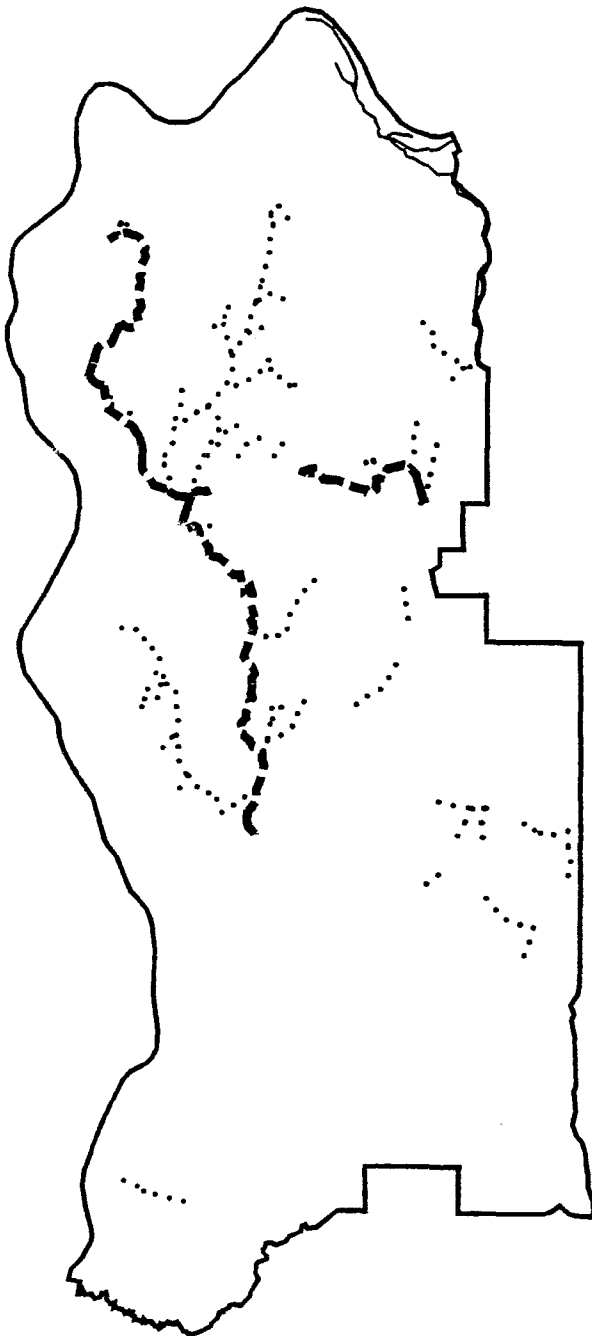


ROADS WITH
SEASONAL RESTRICT-
ION
(DEC 1 - APRIL 15)
63 MILES



ROADS CLOSED
25 MILES

ONLY ROADS
WITH FEDERAL
SURFACE OWNER-
SHIP SHOWN



Roads with Yearlong Closure

25 miles of road in the watershed would be closed to all motorized vehicle use to protect resources, reduce user conflicts, prevent harassment of wildlife and livestock, provide habitat security or ensure visitor safety. The roads in this category include all spur roads in the WSA and any other road not mentioned above as seasonally restricted or open yearlong.

Implementation

1. An informative/interpretive sign would be placed at the head of Woodhawk Trail and at the head of Woodhawk Bottom Road where each intersects with the Twocalf Road. The signs would identify open, closed and seasonally restricted roads, educate public land users on multiple uses in the planning area and provide information to prevent impact to resources.
2. Roads open yearlong and roads with seasonal restrictions would be numbered in accordance with the Lewistown District Travel Plan.
3. All roads not numbered in accordance with the Lewistown District Travel Plan would be considered closed yearlong.
4. Roads with seasonal restrictions would have small signs that indicate the appropriate restricted date.
5. Game retrieval would not be permitted on seasonally restricted or closed roads.
6. No off-road (cross-country) motorized vehicle travel.
7. Administrative use of seasonally restricted roads would not be permissible.
8. Vehicular access for camping would not be permissible within 100 yards of roads open yearlong or during the open period on seasonally restricted roads.

WOODHAWK BOTTOM RECREATION AREA

Same as alternative 1.

HUNTING OUTFITTER MANAGEMENT

No more than three (3) outfitters would be permitted annually for big game hunting. Permits would be issued on a first come, first served basis, with preference given to active outfitters from the previous year. In addition, total outfitted user days would be limited to 30. The allocated outfitter user days would be equally divided among the permitted outfitters on an annual basis, for example:

<u># of Outfitters</u>	<u>User Day Allocation (Each)</u>
1	30 Days (Max.)
2	15 Days
3 (Max.)	10 Days

Outfitters would be required to comply with the seasonal and yearlong road/travel restrictions described above in "Motorized Vehicle Management". Off-road game retrieval or other cross country travel would not be permitted. Vehicular access for camping would be permissible within 100 yards of roads that are open yearlong or during the open period on seasonally restricted roads.

By applying to the BLM and paying an established fee, an outfitter could be granted an "exclusive" camping area. An "exclusive" camping area is one that another outfitter could not utilize for camping. Approval of this type of arrangement would not grant the outfitter any right or authority to preclude or interfere with use of public lands by any party.

Only certified weed seed free hay could be fed to pack or riding animals.

NOXIOUS PLANT MANAGEMENT

Same as Alternative 1

PALEONTOLOGICAL RESOURCES MANAGEMENT

Same as Alternative 1

LIVESTOCK GRAZING MANAGEMENT

1. General Description

The east and west pastures of the current allotment would be divided into 2 upland and 2 riparian pastures. The 2 upland pastures would be grazed in a double-deferred grazing system. The 2 riparian pastures would be grazed in a double rest-rotation grazing system. The AUMs not use (due to prescribed rest) would be placed in voluntary nonuse on an annual basis. The acreage and carrying capacity of the east and west riparian and upland pastures would be based on the 1996 ecological site inventory and the acreage and carrying capacity of the remaining pastures would be based on current permitted use. The acreage and carrying capacity by pasture would be as follows:

Pasture	BLM Acres/AUMs	State Acres/AUMs	Private Acres/AUMs	Total Acres/AUMs	Percent Public AUMs
W. Riparian	5158/410	0/0	252/37	5410/447	92%
E. Riparian	4752/432	0/0	0/0	4752/432	100%
W. Upland	5079/587	481/56	2735/285	8295/928	63%
E. Upland	7508/1041	647/105	14/2	8169/1148	91%
North River	2997/266	575/70	1824/307	5396/643	41%
Total	25494/2736	1703/231	4825/631	32022/3598	76%

The remainder of the carrying capacity on BLM land in the watershed is intermixed with private crop land. There are 29 AUMs on 160 acres of this type of land. Permitted or "authorized" use in all of the pastures in the watershed would be based on the 21 year actual use level of 1668 AUMs as follows:

Pasture	Livestock #	Begin Period	End Period	% Public AUMs	AUMs
Custodial	NA	March 1	Feb. 28	100%	29
N. River	13 Horses	May 1	Oct. 31	41%	32
N. River	150 Cattle	June 1	Sept. 24	41%	234
East & West Riparian	237 cattle	May 1	June 15	94%	337
East & West Upland	288 cattle	June 15	Oct. 31	81%	1065

2. Grazing Method/Pasture Rotation

Only the east and west riparian and upland pastures would be included in the grazing system (See map on page 20). Grazing in the watershed would take place according to the following rotational schedule:

Pasture	Livestock #	Year 1	Year 2	Year 3	Year 4
W. Riparian	167 Cattle	05/01-06/15	05/01-06/15	REST	REST
E. Riparian	69 Cattle	REST	REST	05/01-06/15	05/01-06/15
W. Upland	288 Cattle	06/15-08/09	06/15-08/09	09/06-10/31	09/06-10/31
E. Upland	288 Cattle	08/09-10/31	08/09-10/31	06/15-09/06	06/15-09/06
N. River	13 Horses	05/01-10/31	same as yr 1	same as yr 1	same as yr 1
N. River	150 Cattle	06/01-09/24	same as yr 1	same as yr 1	same as yr 1
Custodial	NA	03/01-02/28	same as yr 1	same as yr 1	same as yr 1

Horses would not be permitted to graze in the east and west riparian or upland pastures.

When a riparian pasture is scheduled for rest as identified in the rotational schedule above, the AUMs not used would be placed in voluntary nonuse.


Any deviation from the annual scheduled use would be coordinated between the BLM and


LIVESTOCK GRAZING MANAGEMENT, ALTERNATIVES 2 AND 4

LEGEND

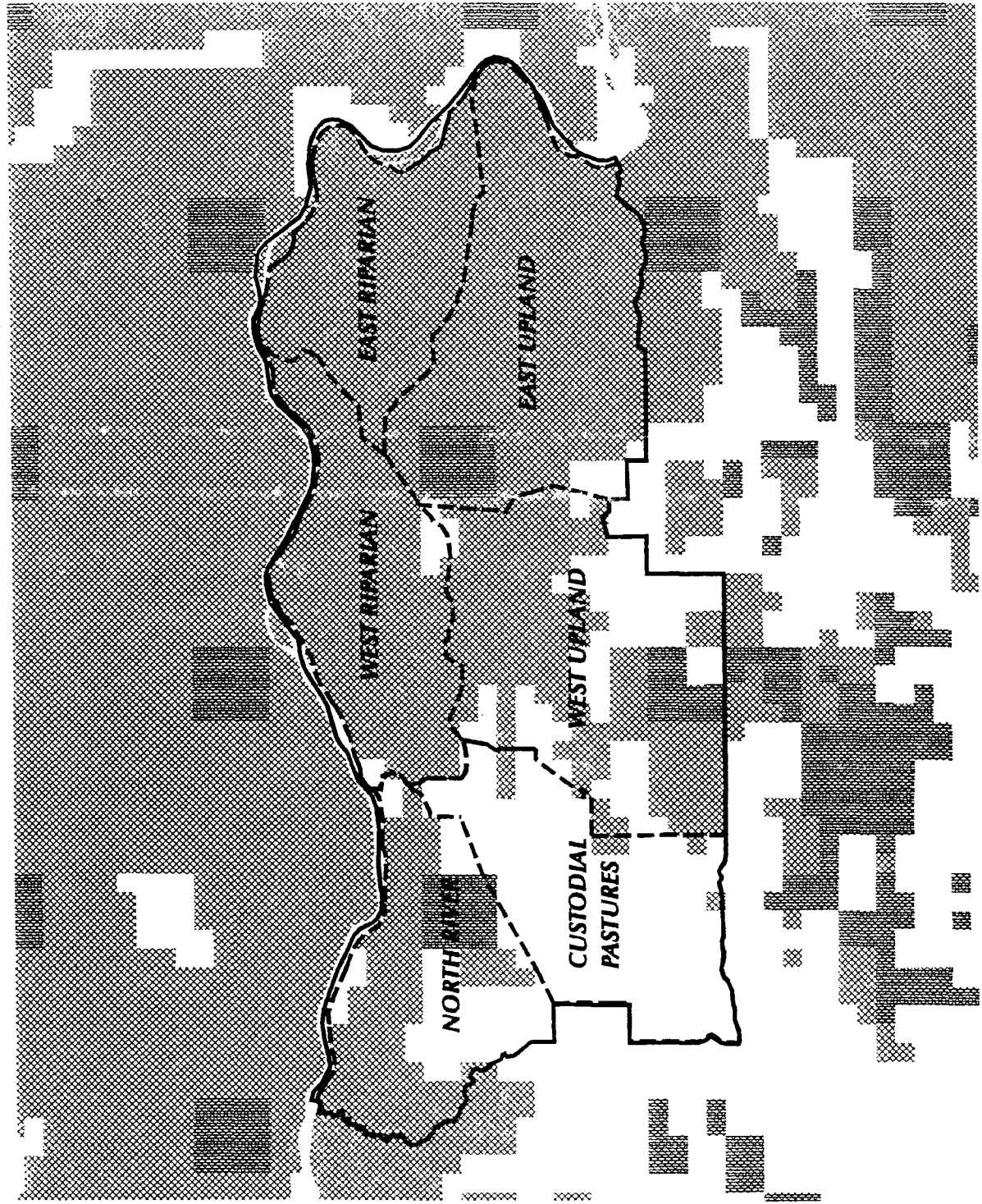
 BLM
25,966 ACRES

 STATE
1,767 ACRES

 PRIVATE
10,652 ACRES

 MANAGEMENT AREA
BOUNDARY

 PASTURE
BOUNDARIES



permittee and be approved by the authorized officer prior to such use taking place. The guidelines for upland utilization, riparian area stubble heights and woody species browse (outlined below) and progress toward meeting allotment specific objectives would be considered when reviewing requests for deviation from annual scheduled use.

During periods of drought or at the earliest possible time when it is apparent that drought conditions during an upcoming grazing season are likely, the BLM and permittee would meet to discuss any management changes that would be needed to reduce resource impacts.

The sequence of rotation identified above would be repeated continuously. The dates indicated in the rotational schedule would be considered mandatory pasture movement dates. Earlier move dates could be required based on resource or livestock condition or if the guidelines identified below were exceeded.

3. Grazing Management Guidelines and Stipulations

Guidelines for grazing management would be implemented. Guidelines for grazing management are preferred practices determined to be appropriate to ensure that site specific objectives can be met. The guidelines are provided to maintain or improve resource conditions in upland and riparian habitats available to livestock grazing. In both riparian and upland habitats, the guidelines focus on establishing and maintaining proper functioning condition and reaching site specific objectives at key areas (see key area map on page 22).

A. Wetland and Riparian Areas - UMNWSR and Woodhawk Creek

The objective established for wetland and riparian areas associated with the UMNWSR and Woodhawk Creek is to improve or maintain riparian area health to proper functioning condition by achieving desired plant communities through improving the health and vigor of native riparian species, increasing native plant diversity and increasing plant root structure.

**Stubble Height Guidelines¹ For Palatable Herbaceous Riparian Species²
On Key Areas Along the UMNWSR and Woodhawk Creek**

Key Area	Key Species	Average Stubble Height ¹
R-1 (MRA Polygon 2101) R-2 (MRA Polygon 2167) R-3 (MRA Polygon 2245) R-4 (MRA Polygon 2330) R-5 (MRA Polygon 2369) R-6 (MRA Polygon 2396) R-7 (MRA Polygon 2400)	Palatable Obligate and Facultative Wetland Graminoids ²	Average Five (5) Inch Stubble Height
WC-1 (MRA Polygon 4)	Palatable Obligate and Facultative Wetland Graminoids ²	Average Four (4) Inch Stubble Height

¹ - Livestock would be removed from the pasture when these levels are achieved.

² - As identified in "Classification and Management of Montana Riparian and Wetland Sites" and summarized in Appendix G

WATERSHED KEY AREAS

LEGEND



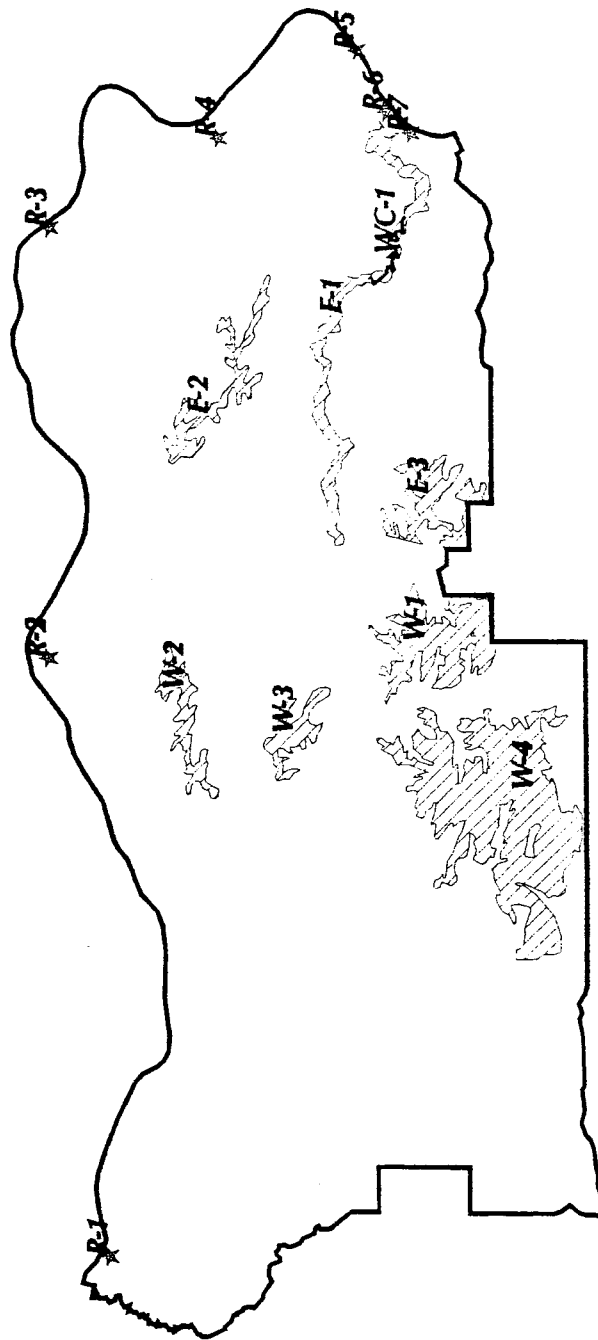
UPLAND KEY AREAS



WOODHAWK CREEK
KEY AREA



MISSOURI RIVER
KEY AREAS



**Utilization Guidelines¹ For Palatable Herbaceous Upland Species²
On Key Areas Along the UMNWSR and Woodhawk Creek**

Key Area	Key Species	Average Utilization Limit ¹
R-1 (MRA Polygon 2101) R-2 (MRA Polygon 2167) R-3 (MRA Polygon 2245) R-4 (MRA Polygon 2330) R-5 (MRA Polygon 2369) R-6 (MRA Polygon 2396) R-7 (MRA Polygon 2400) WC-1 (MRA Polygon 4)	Palatable Facultative and Facultative Upland Graminoids ²	Average Utilization of 50% By Weight

- ¹ - Livestock would be removed from the pasture when these levels are achieved.
- ² - As identified in "Classification and Management of Montana Riparian and Wetland Sites" and summarized in Appendix G

**Browse Level Guidelines¹ For Woody Species
On Key Areas Along the UMNWSR**

Key Area	Key Species	Allowable Browse Level ¹
R-1 (MRA Polygon 2101) R-2 (MRA Polygon 2167) R-3 (MRA Polygon 2245) R-4 (MRA Polygon 2330) R-5 (MRA Polygon 2369) R-6 (MRA Polygon 2396) R-7 (MRA Polygon 2400)	Willows, Cottonwoods, Dogwood, Green Ash and/or Boxelder	25 Percent of Available Leaders (Current Years Growth)

- ¹ - Livestock would be removed from the pasture when these levels are achieved.

B. Uplands

The objective established for upland areas is to improve or maintain upland health to proper functioning condition by achieving desired plant communities through improving the health and vigor of native species, increasing native plant diversity and cover.

**Utilization Guidelines¹ For Desirable Herbaceous Species
On Key Areas In Uplands**

Key Area	Key Species	Average Utilization Limit ¹
E-1	Green Needlegrass, Western Wheatgrass and/or Bluebunch Wheatgrass, Prairie Cordgrass and/or Canada Wildrye	Average Utilization of 50% By Weight
E-2, E-3, W-1, W-2, W-3 W-4	Green Needlegrass, Western Wheatgrass, and/or Bluebunch Wheatgrass	Average Utilization of 50% By Weight

¹ - Livestock would be removed from the pasture when these levels are achieved.

C. Administrative Actions

The guidelines described above are considered best management practices necessary to achieve objectives and to maintain or improve rangeland resources. Herbivore use that exceeds these guidelines would reduce BLM ability to maintain proper range conditions. The success of these guidelines is dependent on active involvement by the grazing permittee in the day-to-day management of this allotment. Even with increased permittee involvement, it is anticipated that the guidelines could be exceeded and overuse could occur from time to time. It is realized that livestock are often unpredictable and unexpected priorities quickly arise in the ranching business. These unexpected circumstances however, would not reduce the tremendous importance of active permittee livestock management in the Woodhawk Watershed.

If the guidelines were exceeded and overuse occurred, corrective action would be implemented during the next grazing season to insure that such use would not occur again and prevent necessary vegetative recovery from taking place. In such instances, prior to the next grazing season, the permittee and BLM Area Manager would cooperatively develop these corrective adjustments. The recommended management adjustments identified below are a tool that could be used, modified, or added to, on a case by case basis. The BLM would prefer that the grazing permittee suggest corrective actions needed to maintain vegetative health and vigor while still meeting livestock management needs. If however, a cooperatively developed corrective adjustment could not be reached, the following adjustments would be applied:

Prescribed Stubble Height for Riparian Species = 5 inches

Actual Stubble Height (inches)	Corrective Adjustment
4 to 5 inches any one year	Discuss situation w/permittee
4 to 5 inches 2 consecutive years	6 inch stubble height the next year
4 to 5 inches 2 or more consecutive years	7 inch stubble height the next year
2 to 4 inches any one year	6 inch stubble height the next year
2 to 4 inches 2 consecutive years	7 inch stubble height the next year
2 to 4 inches 2 or more consecutive years	Rest the pasture the following year
2 inches or less in any one year	Rest the pasture the following year

Prescribed Stubble Height for Riparian Species = 4 inches

Actual Stubble Height (inches)	Corrective Adjustment
3 to 4 inches any one year	Discuss situation w/permittee
3 to 4 inches 2 consecutive years	5 inch stubble height next year
3 to 4 inches 2 or more consecutive years	6 inch stubble height the next year
2 to 3 inches any one year	5 inch stubble height the next year
2 to 3 inches 2 consecutive years	6 inch stubble height the next year
2 to 3 inches 2 or more consecutive years	Rest the pasture the following year
2 inches or less in any one year	Rest the pasture the following year

Prescribed Riparian Woody Species Browse Level = 25% current years growth

Actual Browse Level (% current year growth)	Corrective Adjustment
30 to 60% of current year growth removed any one year	10% or less the next year
30 to 60% of current year growth removed 2 or more consecutive years	Rest the pasture the following year
60% or greater of current year growth removed in any one year	Rest the pasture the following year

Upland Species Utilization Level = 50% by Weight

Actual Utilization Level (%)	Corrective Adjustment
Exceeds prescribed level by more than 10% but less than 25%	Adjust utilization to 40% the next year
Exceeds prescribed level by more than 25%	Rest the pasture the following year

4. Rangeland Management Projects

Approximately 12 miles of fence and 2 watersavers would be required to implement the grazing system identified above. The fence would be constructed with 3 barbed wires and one smooth wire to BLM specifications. The fence would follow the Woodhawk Trail Road east from its intersection with private lands at T.23N., R20E., NESE Section 14, down the road on Deweese Ridge and tie into the enclosure fence at Woodhawk Bottom. A drift fence would be constructed to separate the east and west riparian pastures. It would follow the Sunshine Ridge Road and tie into a steep ridge in T.23N., R.21E., Section 3. Fence materials may be dropped by helicopter in the WSA if access by ATV is not possible. No new roads would be constructed for fence building. As water sources fail in the future, the AUMs serviced by the water would be reduced from the permitted use level.

F. ALTERNATIVE 3

This alternative would provide minimal or no amount of improvement to riparian and upland vegetative conditions while providing proactive cultural resource management and some recreational opportunity.

MOTORIZED VEHICLE MANAGEMENT

Same as Alternative 1

WOODHAWK BOTTOM RECREATION AREA

Same as Alternative 1

HUNTING OUTFITTER MANAGEMENT

Same as Alternative 1

NOXIOUS PLANT MANAGEMENT

Same as Alternative 1

PALEONTOLOGICAL RESOURCES MANAGEMENT

Same as Alternative 1

LIVESTOCK GRAZING MANAGEMENT

1. General Description

There would be no formalized grazing system (see pasture map on page 14). The permittee would begin grazing livestock around May 1. Cattle would be placed on individual water sources in the west pasture. As soon as the water sources in the west pasture were encumbered with cattle, the permittee would begin to place individual groups of cattle on the water sources in the east pasture. As the water sources in the east pasture became encumbered, individual groups of cattle would be placed on the river bottoms. By mid summer, many of the cattle placed on waters in the east and west pastures would travel to the river bottoms where they would join the previously placed cattle and stay until the end of the grazing season in late October or early November. In addition, some cattle would be placed along the river bottom in the North River Pasture. Electric fences would be utilized to keep the cattle from roaming to the uplands where crops are present. The acreage and carrying capacity of all pastures in the watershed would be as follows:

Pasture	BLM Acres/AUMs	State Acres/AUMs	Private Acres/AUMs	Uncontrolled Acres/AUMs	Total Acres/AUMs	Percent Public AUMs
East	13602/1291	640/94	15/3		14257/1388	93%
West	8878/1169	480/107	2887/597	14/3	12259/1876	62%
North River	2997/266	575/70	1824/307		5396/643	41%
Total	25477/2726	1695/271	4726/907	14/3	31912/3907	70%

The remainder of the carrying capacity on BLM land in the watershed is intermixed with private crop land. There are 29 AUMs on 160 acres of this type of land. Permitted or "authorized" use in all of the pastures in the watershed would be based on the 5 year actual use level of 2164 AUMs as follows:

Pasture	Livestock #	Begin Period	End Period	% Public AUMs	AUMs
Custodial	NA	March 1	Feb. 28	100%	29
N. River	13 Horses	May 1	Oct. 31	41%	32
N. River	150 Cattle	June 1	Sept. 24	41%	234
East & West	418 Cattle	May 1	Oct. 31	75%	1898

Up to 26 horses would be authorized in the east and west pastures, but not in addition to the

418 cattle identified above (could be substituted for cattle).

G. ALTERNATIVE 4 - THE PREFERRED ALTERNATIVE

This alternative would improve upland and riparian vegetative conditions and benefit both wildlife and livestock while providing quality recreational opportunities and proactive cultural and paleontological resource management.

MOTORIZED VEHICLE MANAGEMENT

Motorized vehicular travel on BLM lands within the entire watershed would be restricted yearlong or seasonally to designated roads and trails or prohibited on specific roads to protect the resource values in the wilderness study area, vegetation and soils to maintain watershed function, reduce user conflicts, reduce harassment of wildlife and livestock and/or provide habitat security (see map on page 29).

Roads Open Yearlong

11.3 miles of road in the watershed would be open to motorized vehicular travel on a yearlong basis (see map). The roads in this category include: 1) Woodhawk Trail from the intersection with Knox Ridge Road to the intersection with private land at T.23N., R20E., NESE Section 14 and 2) Sunshine Ridge Road from the intersection with Woodhawk Trail.

Roads with Seasonal Restrictions

5.7 miles of road in the watershed would be open to motorized vehicular travel but will have seasonal restrictions to protect resources, reduce user conflicts, prevent harassment of wildlife and livestock, provide habitat security or ensure visitor safety. The roads in the category, along with the seasonal restriction would be as follows:

<u>Road Name</u>	<u>Open to Motorized Travel</u>	<u>Closed to Motorized Travel</u>
Deweese Ridge	December 1 to August 31	September 1 to November 30
Middleton Ridge	December 1 to August 31	September 1 to November 30
Woodhawk Bottom	April 15 to November 30	December 1 to April 14

Roads with Yearlong Closure

19.4 miles of road in the watershed would be closed to all motorized vehicle use to protect resources, reduce user conflicts, prevent harassment of wildlife and livestock, provide habitat security or ensure visitor safety. The roads in this category include all spur roads in the WSA and any other road not mentioned above as seasonally restricted or open yearlong.

Implementation

1. An informative/interpretive sign would be placed at the head of Woodhawk Trail and at the head of Woodhawk Bottom Road where each intersects with the Twocalf Road. The signs would identify open, closed and seasonally restricted roads, educate public land users on multiple uses in the planning area and provide information to prevent impact to resources.
2. Roads open yearlong and roads with seasonal restrictions would be numbered in accordance with the Lewistown District Travel Plan.

MOTORIZED VEHICLE MANAGEMENT, ALTERNATIVE 4 (PREFERRED)

LEGEND



ROADS OPEN
YEAR ROUND
113 MILES



ROADS WITH
SEASONAL RESTRICT-
ION
(SEPT 1 - NOV 30)
5.7 MILES

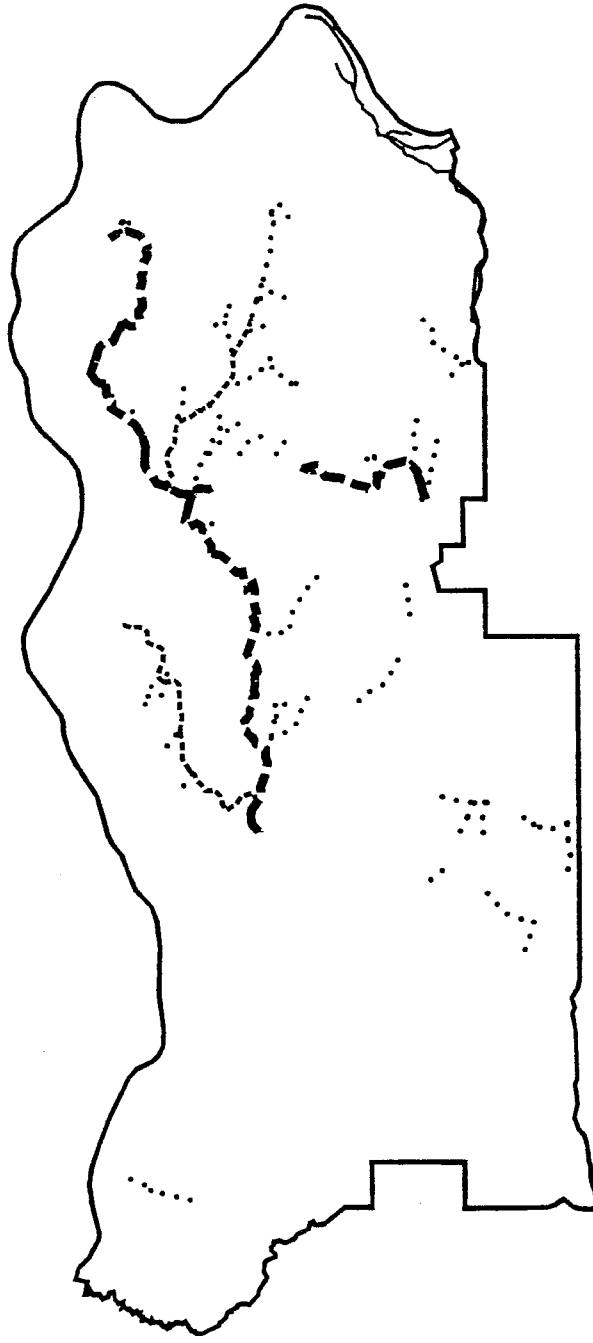


ROADS WITH
SEASONAL RESTRICT-
ION
(DEC 1 - APRIL 15)
6.3 MILES



ROADS CLOSED
19.4 MILES

ONLY ROADS
WITH FEDERAL
SURFACE OWNER-
SHIP SHOWN



be considered closed yearlong.

4. Roads with seasonal restrictions would have small signs that indicate the appropriate restricted date.
5. Game retrieval would be permitted on seasonally restricted roads from 10 am to 2 pm.
6. No off-road (cross-country) motorized vehicle travel.
7. Administrative use of seasonally restricted roads would be permissible.
8. Vehicular access for camping would be permissible within 100 yards of roads open yearlong or during the open period on seasonally restricted roads.

WOODHAWK BOTTOM RECREATION AREA

The quality and safety of the recreational facilities at the Woodhawk Bottom Recreation Area would be improved to meet BLM standards for a minimally developed site. In addition, actions would be taken or continued to eliminate conflicts between livestock and recreationists and between recreationists.

The entire recreation area would be closed annually from December 1 to April 14. All of the campground enclosure fences would continue to be maintained by the grazing permittee.

The existing access road would be repaired and maintained to provide safe vehicle access to the recreation area. Where possible, sharp turns would be realigned and safety turnouts and waterbars would be constructed.

Other proposed site specific action/implementation is described below:

Lower Campground

The existing pit toilet would be replaced with a 1000 gallon vault toilet. The new toilet would be placed in the same location as the current toilet. 4 cooking/warming units and 3 concrete tables would replace the existing fire rings and table.

Hazard trees and limbs would be removed, with emphasis on established camp sites. Hazard trees along the immediate river bank or in a position to fall into the river would be placed in the river to benefit pallid sturgeon habitat.

The established campsites could be mowed on occasion if vegetative cover presents a safety problem (snakes/wildfire). Areas with noxious weed infestations would be avoided.

The road through the campground would be minimally reconstructed and maintained to allow loop-type access with minimal resource impact. The current road is damaging riparian vegetation.

A "No Boat Launching" sign would be placed at the entrance to the campground and also along the riparian area that is building between the campground and the river.

Middle Campground

3 cooking/warming units and 1 concrete table would be placed in existing camping locations.

Approximately 100 feet of fence with a walk through gate would be constructed to prevent vehicle intrusion into the upstream floater campground. The fence would be located just above the existing irrigation dugout that currently serves as a natural boat launch area and would tie into the existing north/south interior exclosure fence. A small "no motorized vehicle" sign would be placed at the walk through gate.

Hazard trees and limbs would be removed, with emphasis on established camp sites. Hazard trees along the immediate river bank or in a position to fall into the river would be placed in the river to benefit pallid sturgeon habitat.

The established campsites could be mowed on occasion if vegetative cover presents a safety problem (snakes/wildfire). Areas with noxious weed infestations would be avoided.

An interpretive sign would be placed at the Nelson homestead

Upper Campground (Floater's Camp)

The only access to this campground would be from the river.

The existing pit toilet would be removed. There would not be designated camping areas and no fire rings or picnic tables would be placed in the area.

Trees and limbs may be removed if hazards become prevalent. This campground would not be mowed.

HUNTING OUTFITTER MANAGEMENT

Same as Alternative 2

NOXIOUS PLANT MANAGEMENT

The primary tool for noxious plant control in the watershed would be Integrated Pest Management (IPM). IPM utilizes chemical, biological, mechanical and other strategies to most effectively combat noxious plants while minimizing impacts to the environment. Control efforts would be focused primarily on Leafy Spurge and Russian Knapweed. Biological controls would continue to be emphasized, especially in riparian areas where using chemicals can be environmentally and economically impractical.

Biological Control Agents

New and existing infestations of Leafy Spurge and Russian Knapweed and new infestations of other Category 1, 2, or 3 noxious plants in uplands and within the floodplain of the Missouri River would be combated with biological control agents. As biological control agents become available, dispersal would be made in the following priority order:

1. Campgrounds
2. Islands
3. Infestations within the active channel of the river, not including islands

4. Dense infestations outside the active channel of the river, but within the floodplain
5. Any remaining infestations, including uplands

Chemical Control

Chemicals would not be used to control noxious weeds within the river floodplain (inside or outside of the active river channel) unless they could be shown to be legal, effective, environmentally safe and would not impact riparian vegetation and other non-target species. If such chemicals become available and are proposed for use, only BLM personnel would be authorized to conduct spray efforts in this environmentally sensitive area.

The BLM would enter into a Cooperative Agreement with the grazing permittee to control new and existing infestations of Leafy Spurge, Russian Knapweed and other Category 1, 2, or 3 noxious plants in the upland areas. The BLM would purchase the chemicals and the permittee (or a licensed applicator hired by the permittee) would conduct the spraying in accordance with applicable application guidelines and label specifications. The permittee would notify BLM representatives of any newly discovered infestations. If a BLM employee discovers an infestation, the grazing permittee would be similarly notified.

If individual noxious plant infestations in the uplands become established and increase in size, biological control agents would be introduced and efforts to eradicate or reduce the infestation with chemicals would be suspended. In these instances, only the perimeter of the infestation would be treated with chemicals to prevent expansion.

PALEONTOLOGICAL RESOURCES MANAGEMENT

The current survey and collection of material in this area shows that high potential exists for future discovery of large land dwelling dinosaurs. The stratigraphic make up of the sediments indicate that the Judith River Formation was deposited in a coastal plain with marine deposition to the east and south. Studies of the carbonaceous layers indicates that the climactic conditions for preservation of fossil material are superior to those in other areas along the river. To date, there have been isolated finds of bone material from a variety of animals. The majority of the finds have been disarticulated remains. At one location several neck vertebrae and a portion of a skull with the upper jaw intact was collected. The Museum of the Rockies identified the specimen as a juvenile hadrasaur. Further excavation of the site was not pursued when no other connecting bones were found.

The Museum of the Rockies is the only BLM approved curatorial facility in the State at this time. The area that they cover is extensive and they have reached capacity for storage of collected material. It is not anticipated that further excavation and collection of specimens would be pursued under their permit in the next 5 years.

Other facilities that have indicated an interest in the area are the University of Chicago and Mount Royal College in Alberta. These facilities will have students doing thesis work in the area over the next 5 years. There is a chance that a significant find would be made during this time. In the event of such a discovery the BLM would prepare a task order and cost share agreement to pursue the excavation of the site. This could involve the use of heavy equipment to remove overburden material and construction of roads to haul the collected specimen out of the area. The average weight of each portion of the plaster casts is between

1 to 3 tons. This makes removal by helicopter or barge unlikely. No new roads would be permitted in the WSA. None of the road work would involve permanent use and no new roads would be permitted in the WSA. Once the site is excavated the road would be closed and reclaimed. Total estimated disturbance from both road and site excavation would be less than two acres. It is anticipated that 3 of these sites will be found within the Woodhawk Creek Area within the next 20 years. When sites are found and recovered, interpretation signs would be placed to document the recovery of the material and inform the recreational users in the area.

LIVESTOCK GRAZING MANAGEMENT

1. General Description

The east and west pastures of the current allotment would be divided into 2 upland and 2 riparian pastures. The 2 upland pastures would be grazed in a double-deferred grazing system. The 2 riparian pastures would be grazed in a double rest-rotation grazing system. The AUMs not used (due to prescribed rest) would be placed in voluntary nonuse on an annual basis. The acreage and carrying capacity of the east and west riparian and upland pastures would be based on the 1996 ecological site inventory and the acreage and carrying capacity of the remaining pastures would be based on current permitted use. The acreage and carrying capacity by pasture would be as follows:

Pasture	BLM Acres/AUMs	State Acres/AUMs	Private Acres/AUMs	Total Acres/AUMs	Percent Public AUMs
W. Riparian	5158/410	0/0	252/37	5410/447	92%
E. Riparian	4752/432	0/0	0/0	4752/432	100%
W. Upland	5079/587	481/56	2735/285	8295/928	63%
E. Upland	7508/1041	647/105	14/2	8169/1148	91%
North River	2997/266	575/70	1824/307	5396/643	41%
Total	25494/2736	1703/231	4825/631	32022/3598	76%

The remainder of the carrying capacity on BLM land in the watershed is intermixed with private crop land. There are 29 AUMs on 160 acres of this type of land. Permitted or "authorized" use in all of the pastures in the watershed would be as follows:

Pasture	Livestock #	Begin Period	End Period	% Public AUMs	AUMs
Custodial	NA	March 1	Feb. 28	100%	29
N. River	13 Horses	May 1	Oct. 31	41%	32
N. River	150 Cattle	June 1	Sept. 24	41%	234
East & West Riparian	580 cattle	May 1	June 15	96%	842
East & West Upland	460 cattle	June 16	Oct. 31	78%	1628

2. Grazing Method/Pasture Rotation

Only the east and west riparian and upland pastures would be included in the grazing system (see map on page 20). Grazing in the watershed would take place according to the following rotational schedule:

Pasture	Livestock #	Year 1	Year 2	Year 3	Year 4
W. Riparian	295 Cattle	05/01-06/15	05/01-06/15	REST	REST
E. Riparian	285 Cattle	REST	REST	05/01-06/15	05/01-06/15
W. Upland	460 Cattle	06/16-08/15	06/16-08/15	08/31-10/31	08/31-10/31
E. Upland	460 Cattle	08/16-10/31	08/16-10/31	06/16--08/30	06/16-08/30
N. River	13 Horses	05/01-10/31	same as yr 1	same as yr 1	same as yr 1
N. River	150 Cattle	06/01-09/24	same as yr 1	same as yr 1	same as yr 1
Custodial	NA	03/01-02/28	same as yr 1	same as yr 1	same as yr 1

Up to 26 horses could be substituted for cattle in the east and west upland pastures, but not in addition to the 507 cattle. For example: if the permittee desired to graze 20 horses, only 487 cattle would be authorized. The horses would be required to follow the same rotational schedule as cattle, but would only be permitted in the upland pastures.

When a riparian pasture is scheduled for rest as identified in the rotational schedule above, the AUMs not used would be placed in voluntary nonuse.

Any deviation from the annual scheduled use would be coordinated between the BLM and permittee and be approved by the authorized officer prior to such use taking place. The guidelines for upland utilization, riparian area stubble heights and woody species browse

(outlined below) and progress toward meeting allotment specific objectives would be considered when reviewing requests for deviation from annual scheduled use.

During periods of drought or at the earliest possible time when it is apparent that drought conditions during an upcoming grazing season are likely, the BLM and permittee would meet to discuss any management changes that would be needed to reduce resource impacts.

The sequence of rotation identified above would be repeated continuously. The dates indicated in the rotational schedule would be considered mandatory pasture movement dates. Earlier move dates could be required based on resource or livestock condition or if the guidelines identified below were exceeded.

3. Grazing Management Guidelines and Stipulations

Same as guidelines from Alternative 2.

4. Rangeland Management Projects

Approximately 12 miles of fence and 2 watersavers would be required to implement the grazing system identified above. The fence would be constructed with 3 barbed wires and one smooth wire to BLM specifications. The fence would follow the Woodhawk Trail Road east from its intersection with private lands at T.23N., R.20E., NESE Section 14, down the road on Deweese Ridge and tie into the exclosure fence at Woodhawk Bottom. A drift fence would be constructed to separate the east and west riparian pastures. It would follow the Sunshine Ridge Road and tie into a steep ridge in T.23N., R.21E., Section 3. Fence materials may be dropped by helicopter in the WSA if access by ATV is not possible. No new roads would be constructed for fence building.

As water sources fail in the future, a well could be drilled (if feasible) and a pipeline could be constructed. This would be a long term project and would not be necessary to implement the outlined grazing system.

5. Interim Grazing Management

Same as Alternative 1. The 1970 AMP would be implemented pending completion of the watersavers and fence construction or until the system proposed above is otherwise implemented and in effect.

III. AFFECTED ENVIRONMENT

A. SOILS/GEOLOGY

The soils in the uplands and along the Missouri River developed on Judith River Sandstone and Bear Paw Shale of the Cretaceous age. Soils present include clays, dense clays, shallow clays, exposed shales, and rock outcrops (sandstone). Other than the rock outcrops and exposed shales, the soils are generally 10" to 14" deep. There are 32,930 acres of soil types in the planning area that are highly susceptible to erosion, 3515 acres that are moderately susceptible and 1940 acres that are slightly susceptible (see map on page 37). More detailed soil information can be found in the **Soil Survey of Fergus County, Montana**.

B. CLIMATE

Climatological data has been collected from the NOAA Weather Station located at the Winifred Airport 20 miles southwest of the Woodhawk area. The annual precipitation based on a 30 year average from 1961 to 1991 is 13.86 inches. Seventy five percent of the annual precipitation (10.75 inches) comes in the form of rain during the six month growing season from April 1 to September 30. The average frost free period is 130 days along the Missouri River.

VEGETATION

Satellite imagery (LANDSAT) and computer enhancement techniques were used to provide a general land cover class map (page 40) and associated acreage. The LANDSAT imagery, as interpreted by Ecological and Geographic Information Specialists, distinguishes broad cover associations generally discernible by percent ground cover and land form. The following summaries are arranged by community type applicable to broad LANDSAT classification schemes:

Grasslands (2127 acres)

This LANDSAT classification consists of primarily short and mid-grasses predominately associated with silty, sandy, claypan and thin silty ecological sites. This vegetative type occurs mainly on rolling hills at all aspects. In many instances, silver sagebrush and/or clubmoss are a significant component of the community.

Common grass species in this classification include western wheatgrass, needle and thread grass, green needlegrass, sandberg bluegrass, inland saltgrass, blue grama, prairie junegrass and threadleaf sedge. Common forbs include American vetch, scarlet globemallow, fringed sagewort, cudweed sagewort, pusseytoes and toadflax. Common shrubs include silver sagebrush, rubber rabbitbrush, prickly pear cactus, and winterfat. Less common species include bluebunch wheatgrass, prairie reedgrass, Nuttall saltbush, big sagebrush and skunkbrush sumac.

This vegetation type is valuable for livestock forage production. These communities also supply important yearlong forage for antelope, elk and to a lesser extent, mule deer. Many nongame birds and mammals utilize these communities throughout their lifecycle. Sharp-tailed grouse generally prefer tall residual grassland areas for yearlong use, while sage/grouse may utilize the short grass areas for strutting grounds. Waterfowl use these areas in the spring, summer and fall for pair bonding, breeding, nesting, broodrearing and staging.

SOIL EROSION SUSEPTIBILITY CLASSES

LEGEND



LOW SUSEPTIBILITY
1,940 ACRES



MODERATE
SUSEPTIBILITY
9,514 ACRES



HIGH SUSEPTIBILITY
32,920 ACRES



MANAGEMENT AREA
BOUNDARY



Sagebrush/Grass (21,874 acres)

This LANDSAT classification is the dominant vegetation type in the planning area. It includes high production and low production sites. The low production sagebrush/grass type is usually associated with areas producing less vegetation than normal or areas with plants in low vigor. In most instances these conditions can be correlated with ecological sites in early and mid seral status. The high production sagebrush/grass type is usually associated with areas producing vegetation at or above normal or areas with plants in normal to high vigor. In most instances, these conditions can be correlated with ecological sites in late seral to potential natural community status.

Western wheatgrass, prairie junegrass, Sandberg bluegrass, green needlegrass, bluebunch wheatgrass, blue grama and needle and thread are the most common grasses. Common forbs include broom snakeweed, American vetch, wild onion, Astragalus species, fringed sagewort, toadflax, scarlet globemallow, lomatium and scurfpea. The most prevalent shrubs are big sagebrush, silver sagebrush and greasewood.

This vegetation type is of moderate to high value as a forage base for cattle in the watershed. Antelope, mule deer, elk, sharp-tailed grouse, sage grouse, waterfowl and many species of non-game birds and mammals use this vegetation type. Antelope and mule deer use these areas yearlong and are dependent on sagebrush for winter browse. Mule deer and elk use the edges of sagebrush ridges adjacent to conifer forests yearlong. Sage grouse are dependent on the sagebrush component of this vegetation type yearlong. Sharp-tailed grouse may utilize this vegetation type yearlong, depending on habitat condition. Waterfowl use these areas heavily in the spring and summer where found adjacent or in association with reservoirs.

Ponderosa Pine/Juniper (6245 acres)

This vegetation type is found on side slopes of major and minor drainages within the watershed in association with shallower soils. Along the edges of ridges and benches, this community frequently merges with sagebrush/grasslands, which occupy deeper soils.

Ponderosa pine and juniper are the dominate species, but can be scattered, leaving open parks. Understory species are scant in the thicker ponderosa pine/juniper stands while sagebrush/grassland species are the primary understory in open timber areas and parks.

In addition to a variety of non-game species, mule deer, elk, bighorn sheep and sharp-tailed grouse use this vegetation type for food and cover. Livestock forage production is low in the dense stands and is often limited by steep slopes. In more open stands, livestock forage production is moderate. Burning dense stands, often improves forage production and use by both wildlife and livestock but impacts wildlife escape cover. The potential for soil erosion is high following fire. Examination of old burns in the area indicate slow recovery is often the norm. Ponderosa pine and juniper provide products such as fuel, posts and poles but are of limited value for lumber.

Douglas-Fir/Ponderosa Pine (730 acres)

This vegetation type is found primarily on north and east facing slopes in the watershed. Other than the presence of Douglas-fir, the vegetative composition is similar to the ponderosa pine/juniper type. In dense stands, the available forage for livestock and wildlife is minimal

but increase as stands become more sparse.

These areas provide excellent cover for mule deer, bighorn sheep and elk. Due to the sparse understory, few food plants are available and livestock forage value is low. Douglas-fir and ponderosa pine provide fuel, posts and poles and a limited opportunity for lumber.

Mixed Shrub (67 acres)

In the Woodhawk watershed, this vegetation type is generally a rose/snowberry component found in association with riparian areas, but encompasses several other shrub communities including greasewood and silver sagebrush.

The rose/snowberry component of this classification is located primarily on alluvial soils and along slopes dropping into small drainage bottoms or drainage bottoms themselves. It is typically found on overflow ecological sites. The grass/silver sagebrush vegetation type overlaps into this type on sideslopes of drainages. This vegetation type also occurs as an understory component in cottonwood and/or willow classifications.

The rose/snowberry vegetation types is dominated by deciduous shrubs. Western wheatgrass, slender wheatgrass, Canada wildrye, prairie cordgrass, green needlegrass, American vetch, perennial sunflower, western yarrow, lomatium, fringed sagewort, scurfpea, hairy goldenaster and white milkweed are also common.

This vegetation type is important to many non-game mammals and birds, mule deer and sharp-tailed grouse for food and cover. When adjacent to water, this vegetation type is important as nesting cover for waterfowl. When adjacent to small grain cropland, this habitat is used by pheasants and gray partridge. Livestock forage production can be high in more open stands while dense stands are avoided by cattle.

Silver sagebrush is the dominant species on many overflow ecological sites in the watershed. It occupies alluvial soils adjacent to streams and along the river. Associated species include western wheatgrass, green needlegrass, blue grama, sweetclover, dandelion and western yarrow.

This vegetation type is often associated with the rose/snowberry and cottonwood and/or willow classifications. It provides important habitat for a variety of no-game species. Antelope, mule deer, sage grouse and sharp-tailed grouse utilize this vegetation type for food and cover. Forage production varies from high in open stands to scant in dense stands.










Greasewood is a common dominant plant on alluvial terraces along the river and small streams. It is usually associated with clay, dense clay, saline upland and saline lowland ecological sites. Understory is usually sparse and includes western wheatgrass, Sandberg bluegrass, Nuttall alkaligrass, inland saltgrass, blue grama, knotweed, seepweed and cactus. This vegetation type provides cover for mule deer, antelope, sage grouse, sharp-tailed grouse, and a variety of no-game birds and mammals. It also provides valuable winter forage for livestock and mule deer.

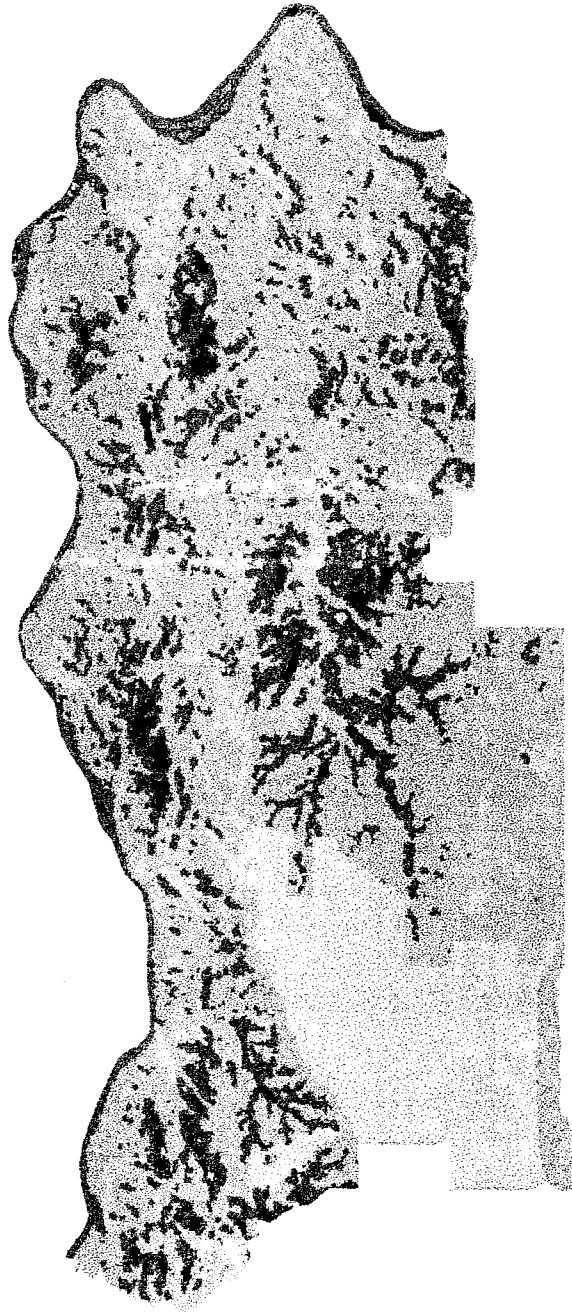
Deciduous Trees and Willow (63 acres)

These vegetation types exist along the river primarily on overflow, subirrigated or wet meadow ecological sites that are wet for long periods or where the water table is high. The understory

VEGETATION TYPES

LEGEND

	GRASSLANDS 2,127 ACRES
	SAGEBRUSH/GRASS 21,874 ACRES
	PONDEROSA PINE/ JUNIPER 6,245 ACRES
	DOUGLAS FIR/ PONDEROSA PINE 730 ACRES
	MIXED SHRUB 67 ACRES
	DECIDUOUS TREES/ WILLOWS 63 ACRES
	SPARSELY VEGETATED/ ROCK/BARE GROUND 2,174 ACRES
	CROPLAND 4,973 ACRES
	WATER 1,043 ACRES



on most of these sites is rose/snowberry, however heavy grazing pressure can lead to an understory dominated by herbaceous species. The most common trees are cottonwood, boxelder, green ash and peachleaf willow while the most common shrubs are sandbar and yellow willow. Common associated species are the same as the rose/snowberry and/or sagebrush/grass types.

These vegetation types are use by mule deer, white-tailed deer, sharp-tailed grouse, pheasants, mourning dove and support high populations of non-game birds. Livestock forage production is normally high.

Sparsely Vegetated/Rock/Bare Ground (2174 acres)

This classification contains lands with less than 10% ground and aerial vegetation coverage, including rock outcrops, badlands, slick spots, steep slopes, roads, developments, etc. Vegetation production levels are minimal. Use of these areas by livestock and wildlife is minimal.

Cropland (4973 acres)

This classification includes acreage that is cultivated, irrigated or otherwise produces a crop or hay. Use of these area by livestock is minimal except after harvest when stubble may be grazed. Use of these areas by wildlife, including elk, mule deer and upland game birds is significant, especially adjacent to areas that provide escape cover.

Water (1048 acres)

This classification includes acreage covered by water such as reservoirs and the Missouri River.

Ecological Status

During 1996, an Ecological Site Inventory (ESI) was conducted in the east and west pastures of the Woodhawk Allotment. Table 1 is a summary of the ecological status of existing vegetative communities in the watershed as determined by the 1996 ESI.

**TABLE 1
ECOLOGICAL STATUS OF VEGETATIVE COMMUNITIES
IN THE WOODHAWK WATERSHED
(Acres/%)**

PNC*	Late Seral	Mid Seral	Early Seral	Uclassified Rock/Bare	Undetermined
0/0	10,579/28	10,457/27	1703/4	4427/12	11,219/29**

* - Potential Natural Community (PNC)

** - Includes cropland and most of the north river pasture

Based on the data collected during the ESI, the livestock carrying capacity in the east and

west pastures was determined in accordance with Soil Conservation Service (SCS) Technical Guidelines. The livestock carrying capacity in the North River and private pasture(s) was determined using existing data. Table 2 reflects the livestock carrying capacity in the Woodhawk Watershed:

TABLE 2
LIVESTOCK CARRYING CAPACITY
IN THE WOODHAWK WATERSHED
(Acres/AUMs)

Pasture	BLM Acres/AUMs	State Acres/AUMs	Private Acres/AUMs	Total Acres/AUMs	Percent Public AUM
East	13587/1588	647/105	14/2	14248/1695	94%
West	8914/883	481/56	3100/342	12382/1261	70%
North River	2997/266	575/70	1824/307	5396/643	41%
Total	25498/2737	1703/231	4825/631	32026/3599	76%

The remainder of the public land in the watershed (160 acres) is intermixed with private crop land. There are 29 AUMs associated with this type of land. In addition there are 1722 acres of BLM land with 437 AUMs of permitted use that are outside of the watershed and are not addressed in this plan.

Noxious Plants

Noxious plants, including leafy spurge and Russian Knapweed, are found along the Missouri River (see map on page 43) but with the amount of vehicle traffic in the uplands, it is highly likely that there are also some off-river infestations. All of the infested areas were sprayed by the BLM in 1992. From 1993 to 1996, the BLM purchased chemicals and attempted to get the grazing permittee to spray the plants in a cooperative effort that had been implemented throughout the Judith Resource Area. However, the chemicals were never picked up from the distributor and the plants were not sprayed. Two species of flea beetles (insects that have proven effective for control of leafy spurge) have been released in the planning area along the Missouri River.

Special Status Plants

A botanical survey covering sensitive plant species and plant communities was conducted in the Woodhawk Watershed during the summer of 1996 by the Montana Natural Heritage Program.

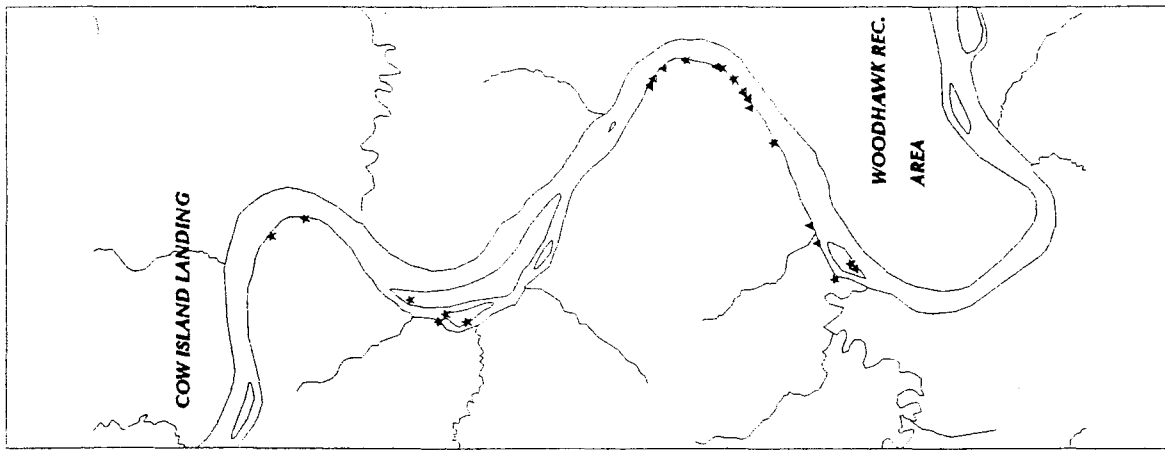
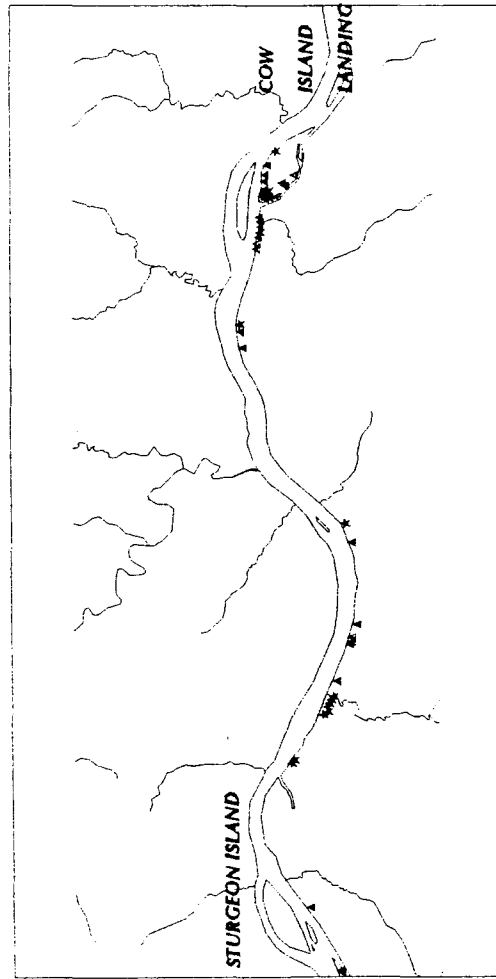
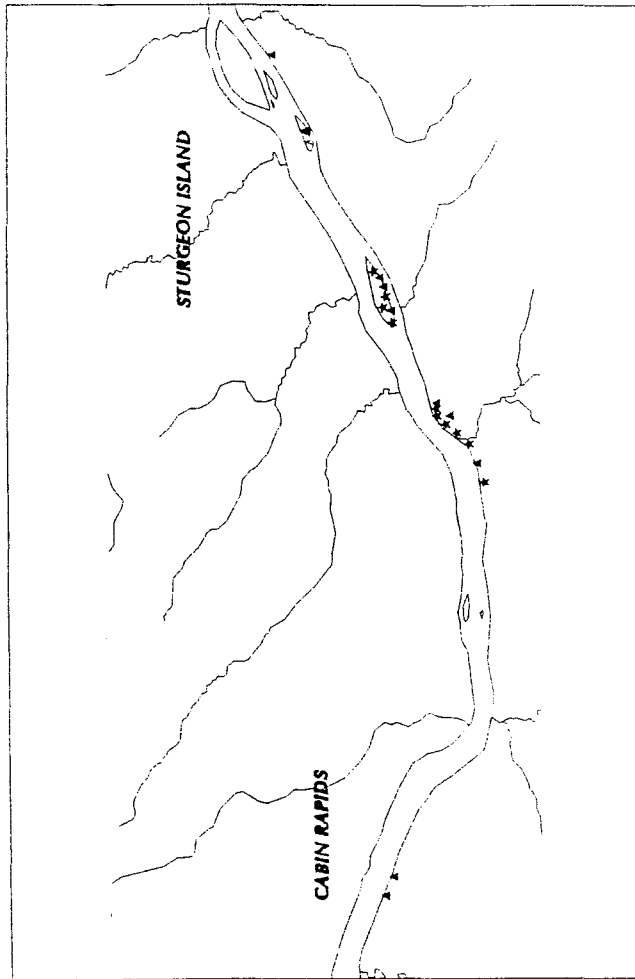
Two populations of the BLM watch species, little Indian breadroot (*Psoralea hypogaea*) were documented, and are part of the new information used to rerank it from "S1" (critically imperiled in the state) to S2 (imperiled in the state). Recurrent stands of the BLM watch plant community, *Pinus ponderosa*/*Carex heliophila* (Ponderosa pine/sun sedge), were sampled and described.

NOXIOUS WEEDS

LEGEND

★ LEAFY SPURGE

▲ RUSSIAN KNAPWEED



One plant association (p.a.), *Pseudotsuga menziesii/Oryzopsis micrantha* (Douglas fir/little seed ricegrass), is recommended for inclusion to the BLM watch list.

The highest biodiversity significance identified in the Woodhawk study area rests in the composite community heterogeneity of the Missouri Breaks landscape rather than in the global or state rarity of the components. In general, the Woodhawk watershed possesses a high number of plant community types for an area its size, including a wide range of successional plant associations. It also has several plant community types typical for eastern Montana which have not been well-documented in the state ecological literature.

Over 40% of the plant community types in the area are potentially rare or at least under-documented in statewide vegetation sampling (10 of 20). By the rarity standards, coupled with the results of this study, the most significant plant associations are:

High global priorities

Pseudotsuga menzeisii/Oryzopsis micrantha (G2 S2)

Pinus ponderosa/Carex heliophila (G3 S3)

Rhus trilobata/Andropogon scoparius (skunkbrush sumac/little bluestem) (G3 S3)

High state priorities

Juniper scopulorum/Oryzopsis micrantha (Rocky Mountain juniper/littleseed ricegrass) (G4 S3)

Possibly high state or global priority

Populus deltoides/Symphoricarpos occidentalis (plains cottonwood/western snowberry)

Puccinellia nuttalliana (Nuttall alkaligrass)

Scirpus americanus

In summary, there are potentially one globally imperiled, two globally vulnerable, one state vulnerable, and three plant associations of undetermined status in the Woodhawk study area. The globally vulnerable plant association, *Pinus ponderosa/Carex heliophila*, is also recognized on the watch list as a special status plant association of the Bureau of Land Management. None of the above plant associations are extensive examples or excellent examples. The first two are perhaps largest in total area. The prevailing vegetation types are in fair to good ecological conditions. What is most significant about the study area is the juxtaposition of the forest, grassland, shrubland, and wetland types in a single plains area. The intactness of this landscape is diminished by historic logging and floodplain farming, past and present livestock use in the lowlands, downcutting due to water impoundments, and noxious weed encroachment which is still at early stages of invasion

One potential new addition to the flora was identified. Bracted plantain (*Plantago aristata*) is common where the *Bouteloua gracilis-Carex filifolia* p.a. occurs.

There are no features recommended for sensitive status since there are no imminent management impacts to the features under current conditions, though they may be vulnerable to activities which would intensify on-site land use or promote spread of noxious weeds.

The highest priority activity for each of these watch features (*Psoralea hypogaea*, *Pinus ponderosa/Carex heliophila* p.a. and *Pseudotsuga menziesii/Oryzopsis micrantha* p.a.) is to

expand the scope of survey. Sands and sandy range sites are potential habitat for little indian breadroot, so sensitive species survey is recommended in conjunction with range analysis for proposed projects which potentially alter land uses in this setting. New developments (roads, stockdams, and fencelines) should be avoided on or adjoining population sites.

The wetland habitats, though they do not have discrete biodiversity significance in their own right, are integral to landscape diversity and balanced management. For this reason, the wetland areas which are currently in fair-excellent condition are recommended as additional biodiversity management concerns, and these include headwaters riparian wetlands and isolated catchment basins.

The Woodhawk Botanical Survey is available for review in the Judith Resource Area office.

D. RIPARIAN AREAS

The Woodhawk Creek hydrologic unit is comprised of approximately 24,220 acres, 21,400 of which are within the boundary of the planning area. The primary drainage of the hydrologic unit, Woodhawk Creek, bisects the planning area for 16 miles from west to east before it enters the Missouri River. It is an intermittent creek with a few pools during wet years. When pools exist, this creek is an important water source for livestock and wildlife. Grazing pressure by ungulates may be contributing to less than desirable or optimum condition of the creek. This situation is exacerbated by the steepness, size and erosive nature of the soils in the watershed and the fact that late spring and summer thunderstorms in the area tend to be erratic, but severe and produce relatively large amounts of precipitation over short periods of time.

In 1993, under contract with the BLM, the Montana Riparian Association (MRA) inventoried the lower 8.80 miles of Woodhawk Creek and evaluated riparian area function and health. These polygons are representative of the entire creek and have been used to interpret riparian area function along the entire reach. According to the MRA, there is very little defined or obvious potential for woody species production in the upper five polygons of the inventoried reach other than shrubs such as silver sagebrush, woods rose, snowberry, greasewood and rabbitbrush. Obligate herbaceous species including sedges, rushes and prairie cordgrass are scattered throughout this reach. These findings hold true for the remainder of the creek above the sampled polygons. In polygon six, nearest the Missouri River, there are mature sandbar and peach-leaf willows and cottonwoods. It appears that the creek has downcut here and the river has migrated toward the mouth of the draw containing Woodhawk Creek. River backwater occasionally stands in parts of the old creek channel. Some of the taller riparian species found in polygon six are along the old channel and some exist in association with the river. Sapling and pole-sized cottonwoods are present, but they comprise less than 1% of the cottonwood canopy cover. Overall sandbar willow canopy cover is low. The health and function ratings for the individual polygons along Woodhawk Creek are described in Table 3:

TABLE 3
FUNCTION AND HEALTH STATUS OF THE
LOWER REACHES* OF WOODHAWK CREEK

POLYGON #	TOTAL LENGTH (Miles)	FUNCTION EVALUATION
1	1.50	73 - Functioning at Risk
2	1.40	64 - Functioning at Risk
3	1.60	69 - Functioning at Risk
4	1.50	56 - Non Functioning
5	1.60	69 - Functioning at Risk
6	1.20	60 - Functioning at Risk

* Based on sample of 6 lower polygons which were determined to be representative of entire creek.

The Upper Missouri National Wild and Scenic River forms all of the north and east boundaries of the planning area (approximately 20 miles). In 1988, under contract with the BLM, the MRA completed an inventory and classification of riparian sites for the entire river, including the stretch in the Woodhawk Area (Hansen 1989). Appendix A shows the acres and successional status of each riparian cover type found in the planning area.

Of particular concern to land managers and the public is the potential loss of cottonwood forests and the overall lack of other woody species regeneration (willows, green ash and boxelder) along the Missouri River. Since 1990, the BLM has been monitoring sites in the Woodhawk area identified by the MRA as having cottonwood seedling or and sandbar willow populations. These studies have indicated that although seedling growth stages exist, very few individuals or stands are surviving to become saplings and poles (or mature in the case of sandbar willows). In fact, all of the current sapling and pole cottonwood in the planning area are found on islands or in areas inaccessible to livestock. Table 4 represents the total acres of cottonwood by growth stage as a percent of the total riparian acres for the Missouri River in the Woodhawk area.

TABLE 4
TOTAL ACRES OF COTTONWOOD BY GROWTH STAGE ALONG THE
MISSOURI RIVER IN THE WOODHAWK AREA

GROWTH STAGE	ACRES	% TOTAL ACRES
Seedlings	113	7.5
Saplings	8	.5
Pole	4	.4
Mature	105	6.9
Decadent	27	1.8
TOTAL	257	17.1%

In order to maintain the current extent of mature cottonwood forests along the Missouri River in the Woodhawk area (132 acres), there would have to be at least an equal amount (a 1:1 ratio) of potential replacement trees to mature trees. Table 5 represents a comparison between potential replacement trees - seedlings, saplings and poles and mature trees - mature and decadent stages and implies an **idealized** situation where all acres of current seedlings, saplings and pole cottonwoods reach maturity. Table 5 is somewhat misleading because a 1:1 ratio is unrealistic due to the normally high mortality rate among cottonwood seedlings. It can be interpreted from the table that if current trends continue, a net loss of at **least** 5% of the acres of cottonwood forests in the Woodhawk Area can be expected in the future. However, considering the current survival rate of seedlings (and then only on islands or areas inaccessible to livestock), the situation becomes even more dismal. Under current management and at the present rate of decline, it appears that there will be periods in the future when mature cottonwood stands are nearly absent from the mainland along this section of the Missouri River.

TABLE 5
CURRENT STATUS OF COTTONWOOD STANDS ALONG THE
MISSOURI RIVER IN THE WOODHAWK AREA

REPLACEMENT*	MATURE**	CHANGE IN	% REPLACED***
TREES AC.	TREES AC.	ACRES	
125	132	-7	94.7%

- * Refers to the seedling, sapling and pole stages of cottonwood development
 ** Refers to the mature and decadent stages of cottonwood development
 *** Refers to the percent of mature trees that are being replaced (assuming no mortality of seedlings, saplings and poles).

From 1993 to 1996, functioning condition was determined in the Woodhawk area at riparian sites along the river that have a high potential for woody species regeneration and production. Also during 1994, functioning condition was determined on a reach by reach basis by analyzing monitoring data, utilizing aerial photo interpretation and professional judgement. Each reach was inspected and determinations were ground truthed. A summary of the functional status for the riparian areas associated with the Missouri River in the planning area is outlined in Appendix B. As shown in the appendix, 13 percent of the total linear length of the riparian area along the river is in proper functioning condition, 40 percent is functioning but at risk to degradation, and 47 percent is nonfunctional. In addition, 23 percent of the total acres of the riparian areas associated with the river are in proper functioning condition, 49 percent are functioning but at risk to degradation, and 28 percent are nonfunctioning. The amount of riparian vegetation produced by sites in proper functioning condition (194 acres per mile) is nearly three times that produced by sites in nonfunctioning condition (67 acres per mile) and one and a half times that produced by sites that are functioning at risk (138 acres per mile).

E. LIVESTOCK GRAZING

The BLM grazing privileges were established on three base property units known as the Ford

Place, Allison Place, and Anderson Place. The area was known as the Woodhawk Allotment and operated by Hugh and Tom Ford. The allotment was fenced and adjudicated in 1965. Total privileges were established at 3192 aums on federal lands. A grazing allotment management plan (AMP) was completed and implemented in 1971. The grazing rotation prescribed in the AMP has not been followed by the permittee or enforced and regulated by the BLM. The ranch unit was purchased by Bar OK Ranch Company in 1985. Vicki Ehlert leases the ranch unit from Bar OK Ranch Company. Tom Ford is designated as an authorized representative for Vicki Ehlert. The ranch is a cow/calf operation, but also produces yearlings and horses.

The Woodhawk Allotment is classified as an I (improve) category because of existing range condition, livestock use in the UMNWSR corridor, and the presence of the Woodhawk Wilderness Study Area (WSA).

There are 3 main pastures in the Woodhawk Watershed; the North River, West and East (see map on page 14). The current permitted use (preference) for these pastures is described in Table 6 below:

**TABLE 6
PERMITTED USE
IN THE WOODHAWK WATERSHED
(Acres/AUMs)**

Pasture	BLM Acres/AUMs	State Acres/AUMs	Private Acres/AUMs	Uncontrolled Acres/AUMs	Total Acres/AUMs	Percent Public AUMs
East	13602/1291	640/94	15/3		14257/1388	93%
West	8878/1169	480/107	2887/597	14/3	12259/1876	62%
North River	2997/266	575/70	1824/307		5396/643	41%
Total	25477/2726	1695/271	4726/907	14/3	31912/3907	70%

The remainder of the permitted use (preference) on BLM land in the watershed is intermixed with private crop land. There are 29 AUMs on 160 acres of this type of land. In addition, there are 1722 acres of BLM land with 437 AUMs of permitted use (preference) outside of the watershed that are not addressed in this plan.

The current grazing use on BLM land is authorized through a permit and by decision as shown in Table 7 below:

**TABLE 7
AUTHORIZED USE
IN THE WOODHAWK WATERSHED**

Allotment	Pasture	Livestock Number	Begin Period	Ending Period	Percent Public AUMs Billed	AUMs
Woodhawk	Woodhawk Custodial	18 Cattle	March 1	Feb. 28	100 Percent	29
Woodhawk	Two Calf Custodial	20 Cattle	March 1	Feb. 28	100 Percent	437
Woodhawk	North River	13 Horses	May 1	Oct. 31	41 Percent	32
Woodhawk	North River	150 Cattle	June 1	Sept. 24	41 Percent	234
Woodhawk	East & West	26 Horses	May 1	Oct. 31	75 Percent	117
Woodhawk	East & West	744 Yearlings or 516 Cattle	May 1	Oct. 31	75 Percent	3348 (1005 temp) 2341 (2 not sched)

Currently, the permittee begins grazing around May 1. Cattle are placed on individual water sources in the west pasture. As soon as the water sources in the west pasture are encumbered with cattle, the permittee begins to place individual groups of cattle on the water sources in the east pasture. As the water sources in the east pasture become encumbered, individual groups of cattle are placed on the river bottoms. By mid summer, many of the cattle placed on waters in the east and west pastures travel to the river bottoms where they join the previously placed cattle and stay until the end of the grazing season in late October or early November. In addition, some cattle are placed along the river bottom in the North River Pasture. Electric fences are utilized to keep the cattle from roaming to the uplands where crops are present.

According to actual use records submitted by the permittee (Appendix F) an average of 1668 AUMs or 61 percent of authorized use has been utilized over the past 21 years. Over the past 5 years, an average of 2164 AUMs or 79 percent of authorized use has been utilized.

RANGELAND MANAGEMENT PROJECTS

In 1993 and 1996, the known water developments in the west and east pastures of the Woodhawk Allotment were inventoried for condition and life expectancy (Appendix C).

The average life expectancy of existing water developments in the west pasture of the AMP is 10 years and in the east pasture the life expectancy is 13.5 years. The cost for replacement (1994 figures) of the structures on public lands in the west and east pastures are as follows:

	<u>West</u>	<u>East</u>
Reservoirs	11 X \$6,000 = \$66,000	13 X \$6,000 = \$78,000
<u>Watersavers</u>	<u>1 X \$18,000 = \$18,000</u>	<u>4 X \$18,000 = \$72,000</u>
	7 Total	15 Total
Replacement Cost (1994)	\$84,000	\$150,000

Total replacement costs for 22 structures in both pastures = \$234,000

Existing water developments that were in good or fair condition with good reliability were located, and the areas that were serviced (1 mile radius) by each water development were delineated (see map on page 51).

The inventory did not include natural water sites such as pot holes and water trapped in natural low areas or reservoirs that were never authorized by the BLM. Most of the water used by livestock in the early grazing season would be a combination of the developed water and the natural water sources. The available water for middle and late season grazing would be primarily from the developed water sites and the Missouri River as the natural water sources are normally dry by late spring.

It is apparent from a comparison of potential water development areas and area watered by existing developments that most of the water development potential for the area has already been realized. Therefore, no additional developments could be constructed in either of the two pastures. However, the existing water sources would provide adequate water for livestock grazing only in years of average or better rainfall; in years of below-average rainfall, livestock would be forced down to the river during the hot season.

The only other projects on federal lands are a cattleguard and eight fences (11 miles total) that were constructed between 1949 and 1973. There are 13 reservoirs and as much as 25 miles of fence located on private lands within the planning unit. Maintenance for all projects in the planning area is the responsibility of the grazing permittee.

WILDLIFE RESOURCES

The responsibility for managing wildlife on public land is divided between the Montana Department of Fish, Wildlife and Parks (MDFWP), who manages the wildlife numbers and the BLM, who manages the wildlife habitat. There is a variety of habitat types in the planning area which support a diverse number of wildlife species. The key habitats in the planning area are sagebrush grassland, woodland/grassland, and riparian areas. All are valuable for wildlife and should be managed with that in mind.

Big Game and Upland Game Birds

Sagebrush shrubland is important for mule deer, pronghorn antelope, elk, sage grouse and sharp-tailed grouse. The sagebrush provides winter forage for big game as well as nesting cover for the upland game bird species. A portion of the Woodhawk area is designated as crucial winter habitat for antelope, it is also yearlong habitat for both mule deer and elk (see maps on pages 52, 53 and 54). There are two historic sage grouse leks present; the standard two-mile radius

WATER SOURCES WITH 1 MILE BUFFER - BLM

LEGEND



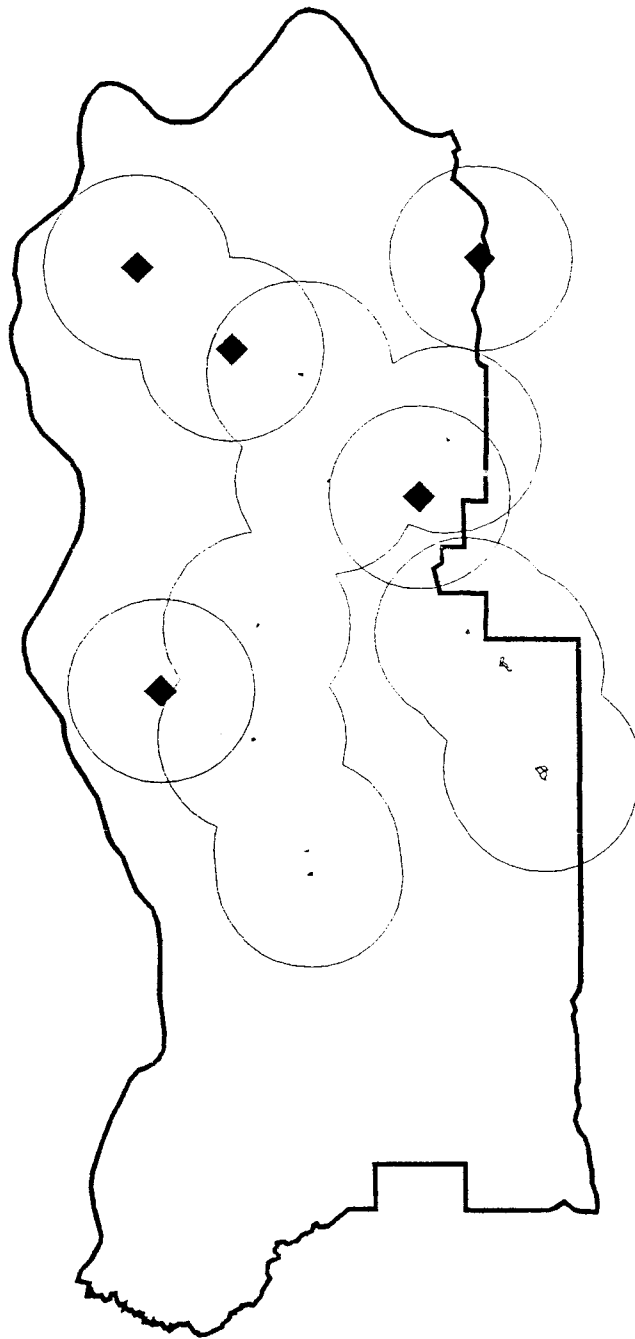
RESERVOIRS



WATERSAVERS

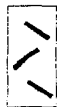


MANAGEMENT AREA
BOUNDARY



ANTELOPE HABITAT

LEGEND



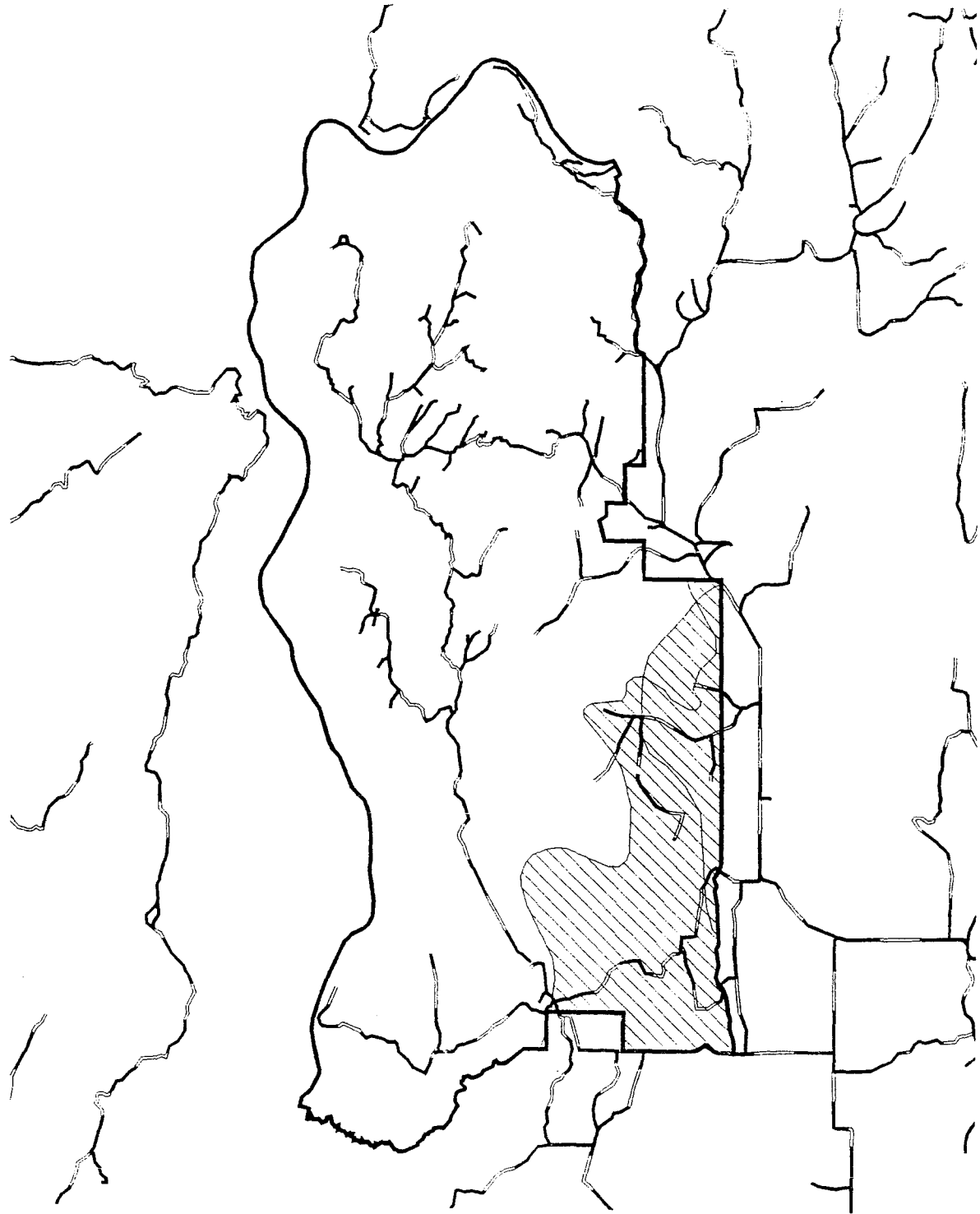
MANAGEMENT AREA
BOUNDARY



ROADS AND TRAILS

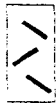


ANTELOPE HABITAT
6,104 ACRES



ELK HABITAT

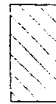
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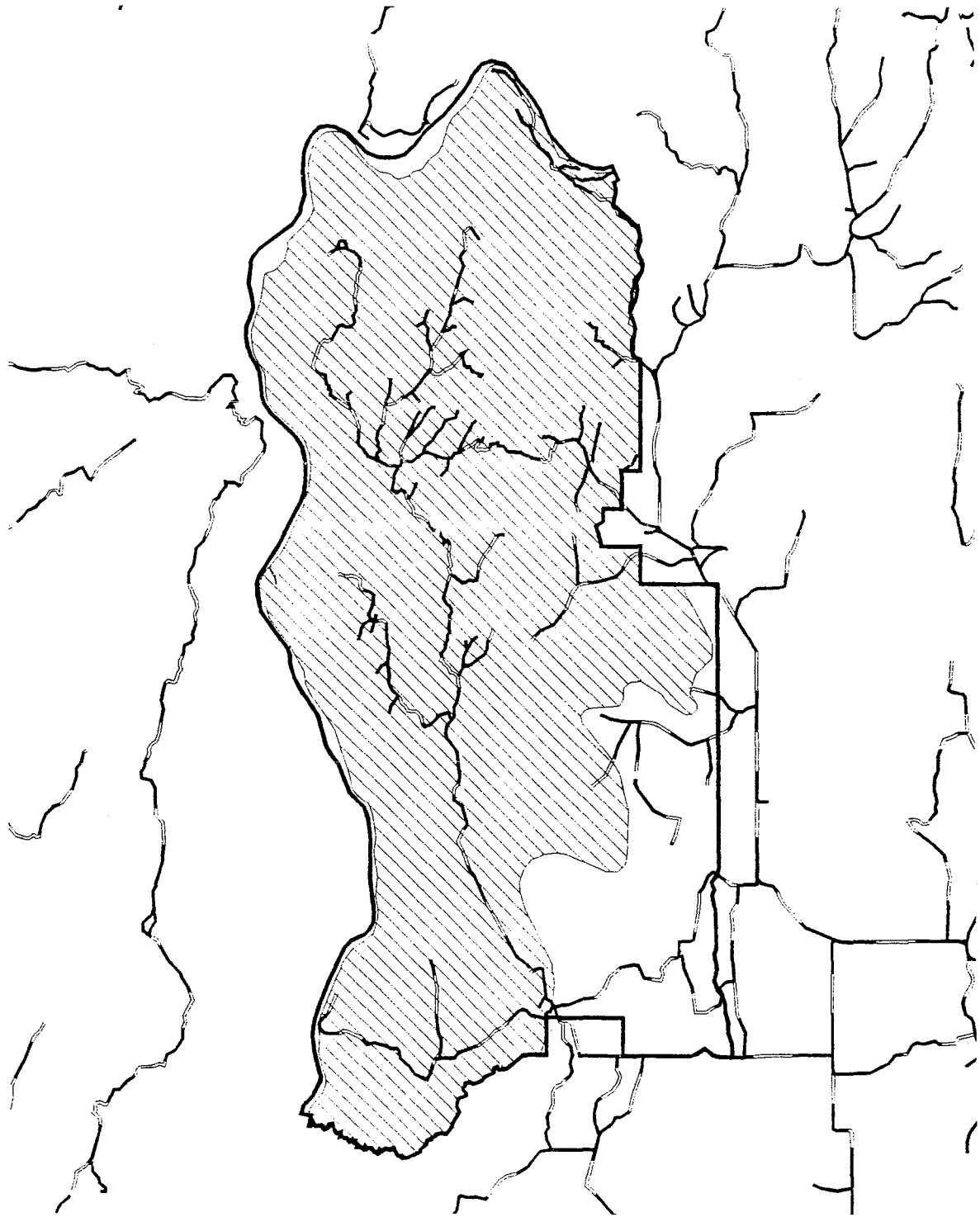
MANAGEMENT AREA
BOUNDARY



ROADS AND TRAILS



ELK HABITAT
32,569 ACRES



MULE DEER HABITAT

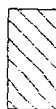
LEGEND



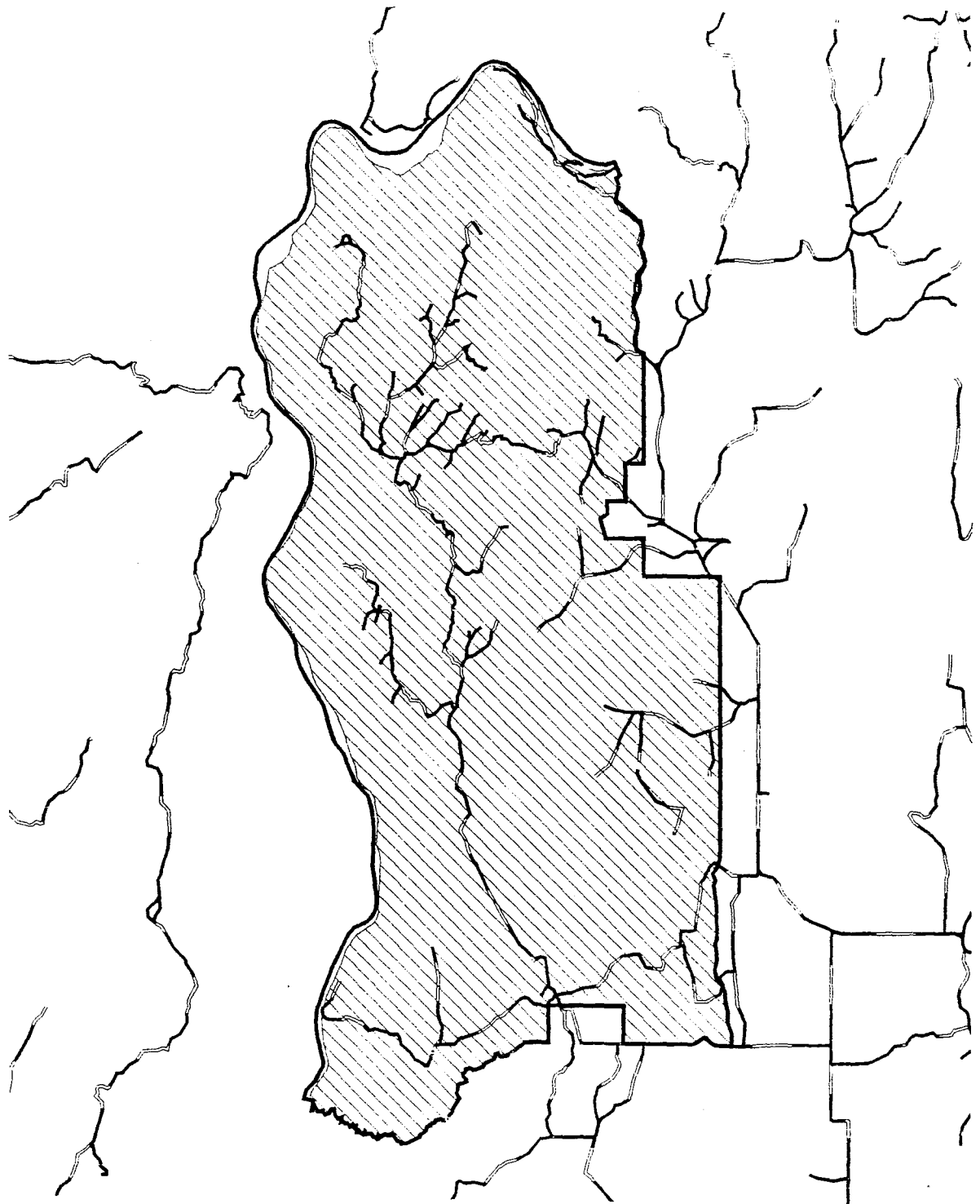
MANAGEMENT AREA
BOUNDARY



ROADS AND TRAILS



MULE DEER HABITAT
38,220 ACRES



of habitat use would incorporate much of the south half of the West Pasture.

Sagebrush habitat intergrades into the "breaks" type, which is the woodland/grassland habitat. Breaks habitat is important to bighorn sheep, mule deer, elk, and sharp-tailed grouse.

Between 1958 and 1961, 43 bighorn sheep were released in the Two Calf Creek area adjacent to Woodhawk. Unfortunately these animals died off from starvation. But, in 1980, 28 bighorn sheep were released on the nearby Mattachusek allotment and expanded into the Woodhawk area by 1982. This herd continues to survive. Bighorn sheep are numerous throughout the planning area and appear to be continuing to expand into available habitat (see map on page 56).

Montana Department of Fish, Wildlife and Parks management objectives are to provide a quality hunting experience and to stabilize the population size. BLM management objectives are to provide quality habitat on BLM land to maintain and expand bighorn sheep in the planning area. There are currently no habitat concerns in this area but efforts will be ongoing to continue to monitor the sheep herd and ensure that habitat remains available for their use.

The mule deer population in the area are currently at a low density. Several factors contribute to the population fluctuations that mule deer experience. There have been two consecutive summers (1994 and 1995) which have been fairly dry. The moisture regime affects the quality of forage, especially the succulent forbs, and therefore can negatively impact the does during the winter months and subsequent fawn survival. Cold winters with deep snow (as in 1996) also affect mule deer survival. There are a high number of coyotes in the breaks which have a negative impact on the fawn survival. Hunting pressure is also increasing in the breaks as the area becomes more regionally and nationally popular.

Elk numbers have also increased since an introduction into the Missouri Breaks in the 1950s with a current level of about 2700. They have expanded from the breaks habitat into agricultural lands south and west of the planning area. MDFWP's objectives include maintaining the population at current levels and preventing or reducing damage to crops. BLM's objectives are to provide habitat for the elk population in the breaks. There is approximately 32,569 acres of elk habitat in the planning area. The abundant number of roads in the area present a problem for elk due to the loss of habitat security. This is especially a problem in the fall when hunters are driving the roads regularly. A road density report within available elk habitat was run in GIS to see how much elk were being impacted by roads. Approximately 20,719 acres of elk habitat is affected by roads using a 1/2 mile buffer around each road in the planning area.

Shrubs are especially important browse for big game species. Utilization on shrubs in the uplands was monitored by BLM Biologists in 1969-1973 and canopy coverage of shrubs was measured in 1989. Although the observed use of rubber rabbitbrush was 80-90%, the canopy coverage was judged to be satisfactory for wildlife habitat. Browse studies on the Charles M. Russell NWR showed that rubber rabbitbrush had sustained 90% use for thirty years with almost no mortality of plants, and were able to reproduce as well. All of this use occurred in late fall and winter, after the plants were finished flowering. It may be that the plants are palatable only after flowering and this protects them from use during the critical growing period. From these studies, it appears that this level of use is sustainable in breaks habitat. However, periodic monitoring of canopy cover of rubber rabbitbrush, big sagebrush and others should be continued to ensure that adequate wildlife forage is maintained in the area.

The riparian vegetation along the Missouri River provides habitat for white-tailed deer. White-tailed deer occur in the area and there seems to be little concern for their numbers.

BIG HORN SHEEP HABITAT

LEGEND



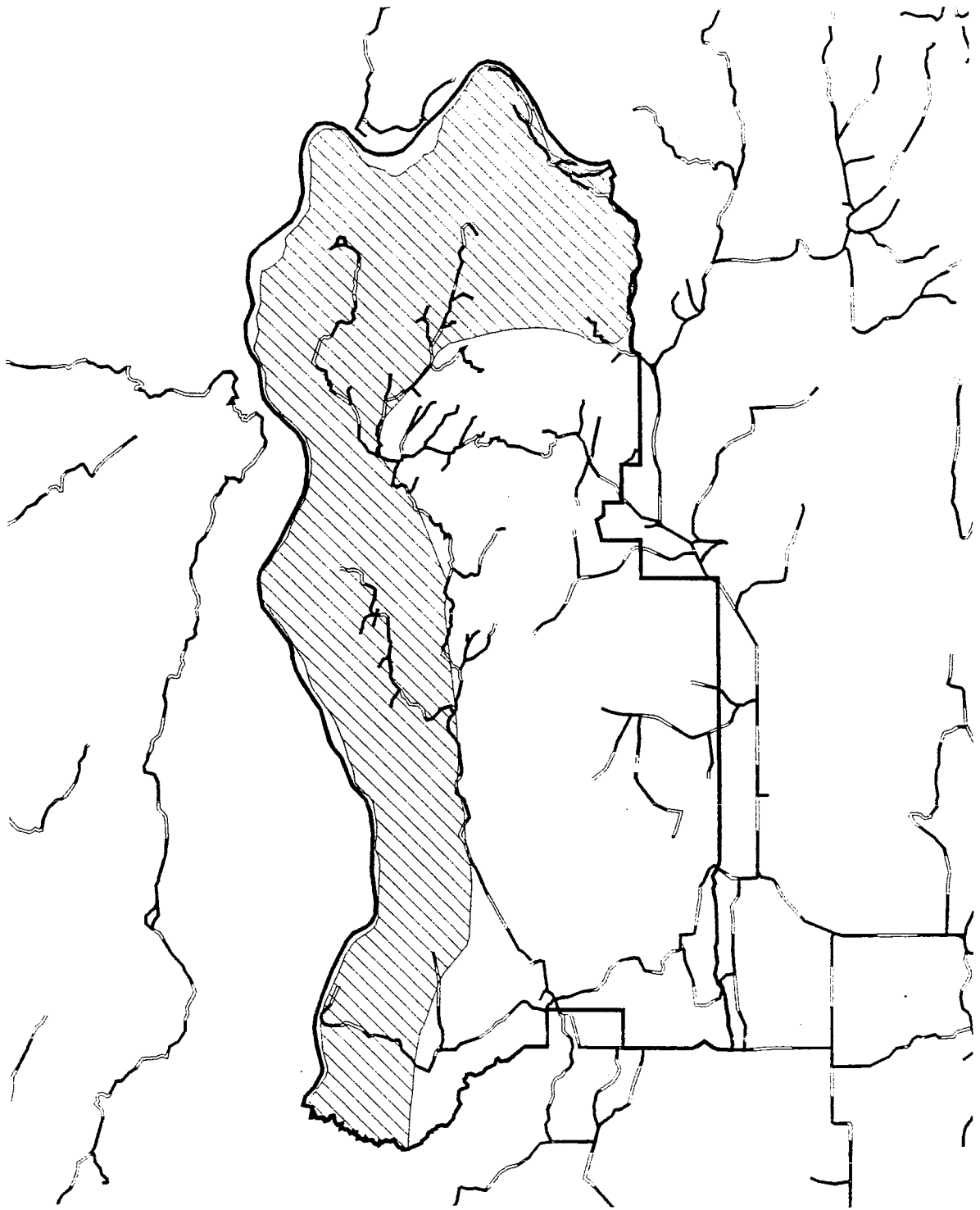
MANAGEMENT AREA
BOUNDARY



ROADS AND TRAILS



BIG HORN SHEEP
HABITAT
19,011 ACRES



Non-Game

Many important non-game species occur in the planning area. There are two prairie dog towns, one just outside of the West Pasture and one near the Missouri River in the West pasture. The prairie dogs not only provide a prey base for coyotes and raptors but they also provide habitat for several other non-game species including burrowing owl, mountain plover, prairie rattlesnake, badger, among others.

The riparian vegetation along the Missouri River provides habitat for migrant songbirds, and several species of raptors. Cottonwood galleries provide nesting habitat for great-horned owls, red-tailed hawks and winter roosting habitat for bald eagles. The cliff faces provide nesting habitat for prairie falcons, golden eagles and (potentially) peregrine falcons (the BLM release site is to the west of the allotment). Cottonwood galleries also support the abundant songbird populations that are prey for several raptor species.

Riparian vegetation also provides foraging habitat for bats that likely summer in the area and feed on insects. The large trees and cliff crevices offer daytime roosts for the bat species in the area. It is not known if there are any caves available for hibernation for bats but there are hibernacula's nearby.

Threatened, Endangered and Special Status Species

There are several species listed as threatened or endangered by USFWS that may occur in the planning area. These species include the peregrine falcon, bald eagle, and the pallid sturgeon.

Peregrine falcons have been released at a hack site on the Missouri River approximately 12 river miles west of the planning area. Approximately 24 young birds have been released since 1993. There is potential nesting habitat within the planning area for peregrine falcons although none have been located. Food availability is a key factor for their survival. Peregrine falcons prey on passerine birds and ducks. Rock doves which are abundant on the river are a favorite food because they are easily caught. Peregrine's will also forage on starlings in nearby farmed fields.

Bald Eagle's have historically nested on the Missouri River, although there are no active nests in the planning area. In 1996, there were two active nests which were located east of Woodhawk. There may be suitable habitat to support additional bald eagle nests on the river. They use large cottonwood trees for nests, usually in a larger cottonwood gallery (>3 acres) with a healthy riparian understory. Bald eagle's like to forage on fish when it is available and channel catfish may provide an abundant food source on the river, however bald eagles are also scavengers and feed on anything they can locate. The bald eagles may also winter in the area however their winter habitat is mostly associated with areas of open water unless there is carrion available. The Missouri River is often covered with ice, making foraging impossible for eagles in the winter.

The pallid sturgeon is listed as endangered by USFWS, they believe it may be close to extinction. Habitat for most fish species, including pallid sturgeon are affected by streamside vegetation and sediments. There is a recovery plan for this species which identifies the Upper Missouri River from the mouth of the Marias River to the headwaters of Fort Peck Reservoir as a recovery-priority area. Some primary reasons for the species decline are destroyed or altered spawning areas, reduced food sources or ability to obtain food. Efforts can be made to see that snags return to the river and side channels are left open for spawning areas. Many other problems with the habitat are widespread and large in scale affecting the Missouri and Mississippi Rivers which can not be affected by this plan.

Four other species are listed by USFWS as Candidates for listing meaning that they have all been found to be warranted for listing but are precluded at this time by other listing activities. These species include mountain plover, swift fox, sicklefin chub and sturgeon chub.

The mountain plover is found on very short grass habitat usually created by prairie dogs, overgrazing by livestock, roads, and burns. They also like a gravelly substrate for nesting and foraging. The swift fox is not likely to be in the area. They were released on a reintroduction in Canada and are working their way south into Montana. They also like short grass habitat with a loose soil for digging dens.

BLM has a special status list of many other species that may occur in the planning area (Appendix D). Baird's sparrow, LeConte's sparrow and long-billed curlew are special status species which depend on the grassland habitat type. They need taller grasses in excess of 10 cm in height for nesting cover.

Northern goshawks and hairy woodpeckers live in conifer forest and may occur in the breaks in small numbers. The three-toed woodpecker frequently comes in after an area has been burned.

The gravel bars, mudflats and flowing water of the Missouri River provide occupied and potential habitat for the fish species as well as black tern, snapping turtle, and spiny softshell turtle.

H. CULTURAL/HISTORIC/PREHISTORIC RESOURCES

Cultural-Prehistoric/Historic Resources

"Prehistory", the human occupation of north-central Montana prior to A.D. 1805, initiated more than 11,000 years ago. Prehistory ended and history began 170 years ago with the arrival of the Lewis and Clark Expedition on the high plains via the Missouri River (Coues 1893; Thwaites 1904; Devoto 1953; Jackson 1962).

Prehistory

The Missouri River Breaks and the Upper Missouri National Wild and Scenic River occupy an area that is within the High Plains archaeological culture area of North America.

The prehistoric chronology of the UMNWSR corridor, which the Woodhawk area is a part of, is little understood at the present time. To date, little data exists to support a 11,000 year occupation continuum. At best, only a handful of prehistoric sites have been scientifically studied, evaluated, and dated. The most recent of these investigations is the Hoffer Site (24CH669) (Davis 1989). This site contained a Late Middle Period (Pelican Lake) component. The cultural chronology for the Pelican Lake Phase is 1300 B.C. to A.D. 200.

Davis states in the Hoffer Site investigations that, "Pelican Lake" appears to be the initial occupant of sites within the Missouri River floodplain in the UMNWSR (Davis 1982a). Evidence of earlier floodplain occupations most probably have been scoured away or may be buried in preserved sediments presently inaccessible to erosional processes.

It is logical to conclude that prehistoric occupation did occur, if not sporadically, throughout the 11,000 year cultural continuum defined for the High Plains. Natural resources consisting of food (plants and animals), fuel, and water would have been readily available within the UMNWSR

corridor. It has not been documented that a cultural hiatus occurred in the river corridor during a time (9,000 B.C. - 1300 A.D.) when adjacent cultural areas in central Montana were flourishing.

Historic

Recorded history began for the Missouri River Breaks (UMNWSR corridor) in May of 1805 with the arrival of the Lewis and Clark Expedition.

The fur trade in the area became a reality, when in 1831, James Kipp (Hudson Bay Company) led an expedition up the Missouri River to establish a post (Fort Piegan) in Blackfeet country, near the confluence of the Missouri and Marias rivers. Following the initial establishment of Fort Piegan, numerous other posts were built on the Missouri River, within the UMNWSR corridor.

At the time the fur trade ended, gold was discovered in western Montana, and the rush was on. The first steamboat reached Fort Benton in 1860, which provided the quickest transportation for miners traveling to the gold fields. Thousands of miners depended upon the steamboats.

The steamboats played a major role in the development of the area by bringing needed supplies. Not only were the local areas supplied with needed goods, but the bulk of the goods were transported, by wagon, to the gold fields and ranches/farms scattered throughout western and northern Montana.

The coming of the railroads in 1887 to Fort Benton, ended the steamboat era. With the railroads came the homesteaders. The UMNWSR corridor was homesteaded and some of their remains are still present today.

The fur traders, the steamboats, and the homesteaders were the major players in the settlement of the area within the UMNWSR corridor.

Nez Perce Trail

The Nez Perce National Historic Trail was officially designated as such in 1989. The Nez Perce War of 1877 (US Forest Service and US National Park Service a,b; USDA Forest Service 1990) left some remnants in the present UMNWSR. In 1877 the Nez Perce crossed the Missouri River from the south to north at Cow Island, where they encountered U.S. Army forces dug in at Camp Illges. After a brief skirmish there, the Indians went north, upstream along Cow Creek. No remnants of this event have been positively identified in the UMNWSR corridor. A portion of the designated trail is located within the Woodhawk area.

Traditional American Indian Religious Values

In consultation with regional American Indians, Deaver(1986:41) has identified the following traditional contemporary Indian religious sites that may be present in the UMNWSR area:

1. vision quest sites
2. Monumental/anthropomorphic/zoomorphic rock features...
3. rock art sites...
4. burials...
5. habitation sites...containing special purpose ceremonial structures...tepees...and
6. dance grounds...

She notes (Deaver1986:41-42) that particular artifacts may also have ritual significance(e.g., fossils with spiritual power), and sacred plant gathering areas or wildlife nesting areas merit

protective BLM management to ensure their continuing value in dynamic religious systems (Knudson 1992).

No formal investigation has been made to identify UMNWSR corridor sacred American Indian geography. One area sacred to the Chippewa Cree, has been noted (24BLC1). This needs verification and identification, and all areas of possible American Indian human burials need attention. Areas of traditional American Indian religious concern should be expected throughout the UMNWSR (Knudson 1992).

As part of the Judith-Valley-Phillips (JVP) Resources Management Plan and the Upper Missouri National Wild and Scenic River Cultural Resource Management Plan, those sites that are located on BLM lands within the UMNWSR corridor and this activity plan, will be evaluated for National Register eligibility. Known recorded sites will be re-visited, site records updated, and photographed. Unknown cultural sites (historic/prehistoric) discovered during site specific inventories (e.g., range improvements, recreation development) will be recorded and evaluated.

Appendix E contains a summary of the known recorded cultural resources within the boundaries of the Woodhawk Activity Plan. Information includes the site number, site name, site type, and general location. One of these sites, the Nelson Homestead (24FR402), has been evaluated. Through consensus, between the BLM and the Montana State Historic Preservation Office, the Nelson Homestead has been determined to be eligible for listing on the National Register of Historic Places. Only those sites located on BLM lands will be addressed in this activity plan.

I. PALEONTOLOGICAL RESOURCES

The surface geology exposed by the deeply incised drainage pattern within the Woodhawk area is that of the Cretaceous aged Judith River formation. The sedimentary layers above and below this stratigraphic horizon are derived from a marine depositional environment. The Judith River formation is composed of both marine and terrestrial deposits ranging from fine shales to coarse arkosic sands and coal seams indicative of fresh to brackish water environments. In these sandstone and coal seam deposits there are occurrences of large terrestrial vertebrate animals. The exposed fossil beds in this area are outstanding for their potential of scientific study. The combination of vegetation preserved in and around the coal seams (lignite) and the reptilian fauna gives paleontologists an opportunity to study both the animals and plants which fed them in the same environmental setting where they were preserved.

There have been two inventories conducted on the Upper Missouri Wild and Scenic River. One was a reconnaissance of the entire river completed in the summer of 1984. This was a general study of the entire river corridor from Coal Banks Landing to Fred Robinson Bridge. The other was a PHD Thesis that concentrated on the Judith River Formation to show that such is a facies change of the depositional environment rather than a separate depositional accumulation from that of the Two Medicine Formation exposed along the upper reaches of the Marias River in west central Montana. Both of these studies involved mapping and collecting of surface fossil evidence. The studies confirm that this area has one of the richest fossil assemblages along the river.

J. RECREATION

Upper Missouri National Wild and Scenic River

The Upper Missouri National Wild and Scenic River (UMNWSR) is located between Fort Benton

and US Highway 191 in North Central Montana. This 149 mile stretch of river flows generally west to east through Chouteau, Blaine, Fergus and Phillips Counties. It was designated a component of the National Wild and Scenic Rivers System in 1976. The UMNWSR forms the north boundary of the Woodhawk area from river mile 112 to river mile 131.5 for a total of nearly 20 river miles. The 16 mile segment of river adjacent to the Woodhawk area between river mile 112 and river mile 128 is classified as "wild", and a 3.5 mile segment from river mile 128 to river mile 131.5 is classified as "scenic". The unique and varied scenery was a key reason for the Upper Missouri's inclusion in the National Wild and Scenic Rivers system. In defining the boundaries of the management corridor, preservation of the area seen from the river was a prime consideration. The general lack of screening vegetation adds to the visual sensitivity of the "seen area" found within steep slopes and cliffs creating a rim-to-rim boundary (river boundary).

Over the last ten years, an average of 2,230 visitors have registered annually for boating the Upper Missouri National Wild and Scenic River. The actual use is considerably higher since these figures represent about 60% of those using the river during the primary use season (the period between the weekend before Memorial Day through the weekend after Labor Day), and approximately 25% of those using the river during the rest of the year. Hunting use on the river has increased dramatically as land access has become more of an issue. Hunters register only infrequently and use numbers are much higher than recorded. Fluctuations in water levels affect floater numbers, i.e. high flows means more floaters and low flows means fewer floaters.

Of those boating the river, 31% or an annual average of 690 registered visitors depart the river at Kipp Recreation Area. This would convert to an estimated actual use of over 960 visitors who experience the river reach between river mile 112 and river mile 131.5 (Woodhawk area). Given an average days float of 22 miles, the number of visitors along this reach would convert directly to visitor days. Over 200 floaters spend an additional day at Woodhawk Bottom Recreation Area camping, hiking or visiting the Woodhawk Wilderness Study Area (WSA). Over 100 visitor days were spent at other spots (usually riparian areas) along the river in the Woodhawk area by floaters that camp, hike, hunt or view wildlife. **This gives an estimate of over 1300 visitor days by UMNWSR floaters.** There is an estimated 3 to 5% increase annually in river floaters.

Visual Resource Management

BLM land within the planning area has been assigned a Visual Resource Management (VRM) class based on a process that considers scenic quality sensitivity to changes in the landscape and distance zone. There are four VRM classes numbered I to IV. The lower the class number the more sensitive and scenic the area. Each class has a management objective which prescribes the level of acceptable change in the landscape. This area has **three** classes.

Public land within the river corridor in the section classified as wild, (river mile 111.9 to river mile 128.5) including lands adjacent to the corridor (below the rim) and the Woodhawk WSA, have a **Class I** VRM classification. This class provides for natural ecological change and allows limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Public land in the section of the river corridor classified as scenic (river mile 128.5 to river mile 138.8) and lands adjacent to the corridor (below the rim) has a **Class II** VRM classification. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Public lands in the uplands (generally above the rim) has a **Class IV** classification. This class allows for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic element.

National Historic Trails

The UMNWSR is the foremost component of the Lewis and Clark National Historic Trail, and the area around Cow Island is a highly significant segment of the Nez Perce National Historic Trail. The visitor days attributed to these trails are included in the visitor days identified in other sections.

The Lewis and Clark National Historic Trail was designated a segment of the National Historic Trail System in 1978. The Lewis and Clark Expedition was one of the most dramatic and significant episodes in the history of the United States. It stands, incomparably, as our Nation's epic in documented exploration of the American West. This portion of the 8000+ mile journey was on the Missouri River. The expedition passed through this area in May 1805 and on the return trip in July 1806. There is a May 26, 1805 Lewis and Clark campsite at river mile 114.2 where the "Corps of Discovery" camped in a "small grove of cotton wood," but now there is no remaining evidence of the campsite or the cotton woods. Clark summarized his opinion of the area they had journeyed through this way; "this Countrey may with propriety i think be termed the Deserts of America, as I do not Conceive any part can ever be Settled, as it is deficient in water, timber and too Steep to be tilled." History buffs come from all over the world to retrace the route and spend time at the campsite locations.

The Nez Perce National Historic Trail was designated a component of the National Historic Trail System in 1986. The 1170 mile route was used by the Nez Perce Indians, led by Chief Joseph, in an attempt to escape from Oregon to Canada in 1877. The escape was marked by over 20 battles and skirmishes with the Cow Island skirmish of September 23, 1877, being the last encounter prior to the Nez Perce surrender only 45 miles north of the Woodhawk area. The Cow Island skirmish site can be seen from Deweese ridge. However, there is no remaining evidence of the Nez Perce trail. This area attracts the interest of history buffs and Native Americans. Periodically, people try to find the trail and retrace the steps of Chief Joseph and his followers. The area appears much today as it did in 1877.

Watchable Wildlife Area

The entire UMNWSR was designated a Watchable Wildlife Area in 1990. It was given this designation because of the abundant, unique and diverse wildlife populations that abound along the UMNWSR. Visitors come from around the world to view the wildlife found in the area. The numbers are included in the floater numbers mentioned above.

Woodhawk Bottom Recreation Area

Woodhawk Bottom Recreation Area located along the river from mile 129.5 to mile 130.9 in the north east corner of the area is totally encompassed by the planning area (see map on page 63). The area has road access and is presently a minimally developed recreation area.

This tract was acquired in 1982 through an exchange for its cultural, historical, recreational and wildlife values. One of the spur roads for the Missouri Breaks Back Country Byway leads to this site. The area is the location of the Gus Nelson homestead (1910). The homestead is made of

WOODHAWK RECREATION AREA - CURRENT SITUATION

LEGEND



FENCES



ROADS AND TRAILS



BLM



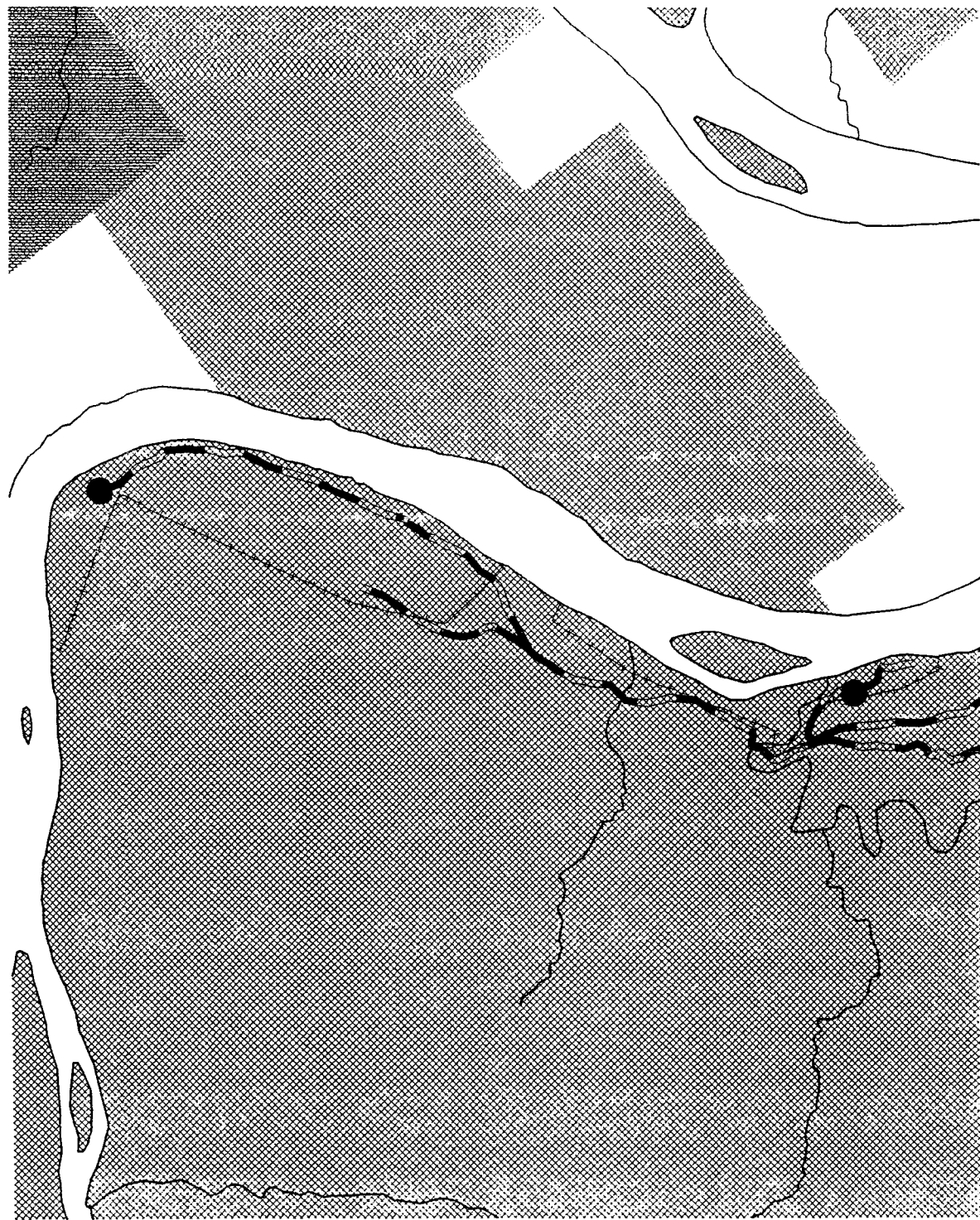
STATE



PRIVATE



TOILETS



logs with a sod roof. There are several out buildings and an assortment of farm equipment. There has been some stabilization of the homestead, clean up of the area and securing of the farm equipment. There is good dry weather public access to the area. There are two minimal developed campsites at this location. One site is used primarily by land-based visitors and the other site is used primarily by floaters. Each campsite has one pit toilet. The entire area has been fenced to exclude livestock and none of the area is allocated for grazing.

This location receives the greatest amount of visitor use of any location on the lower river (Judith Landing to Kipp Recreation Area). The area is a well known place for paddle fishing. During hunting season, hunters come to the area in pursuit of big game, waterfowl and upland game birds. Wildlife viewing, picnicking and hiking are other activities that visitors enjoy at the area. History buffs also frequent the area. Estimated average visitor use for the area is over 500 visitor days a year. (This does not include the 200 visitor days from river floaters mentioned above).

Woodhawk Wilderness Study Area

The Woodhawk Wilderness Study Area (WSA) (approx. 8,100 acres) is entirely encompassed by the planning area boundary (see map on page 65). This verifies the primitive condition that many visitors are seeking. The Missouri Breaks Wilderness Suitability Study (1987) found none of the area as suitable for wilderness. However, Section 603 of FLPMA directs BLM to manage lands under wilderness review by Interim Management Policy and Guidelines (IMP). This states "During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness... (emphasis added)" This language is referred to as the "nonimpairment" mandate.

There is good access to and around the boundaries of the WSA. There is also a "cherry stem" trail that bisects the WSA, but driving off existing roads and trails is prohibited. Signs are posted identifying the WSA boundary.

Visitor use to the WSA for its wilderness values is presently estimated at 50 visitor days annually. Hunting, hiking, rock hounding and wildlife viewing accounts for an additional estimated two hundred visitor days in the WSA for an estimated total of **250 visitor days annually in the WSA.**

Missouri Breaks Back Country Byway (MBBCB)


The Missouri Breaks Back Country Byway has approximately 16.7 miles within the Woodhawk Area. The Back Country Byway was established in 1993. It traverses one of the most geologically unique and historically significant areas in Montana. There has been no vehicle counter on the roads, but letters and phone calls of interest indicate that over 100 visitors used the roads to enjoy the Back Country Byway.

Outfitting


In 1996, there were 15 outfitters that were permitted to float the UMNWSR and five outfitters that were permitted for hunting on the public lands in the area. Outfitter numbers and use on the river fluctuate depending on water levels. In 1994 there were only five active outfitters on the river and only two of those utilized the lower section. At the present time, use of the lower section of the river is low but all indications are that there will be an increase in future use. Only one of the hunting outfitters was active in 1994. There has also been interest in this area by other outfitters. Visitor days from river outfitters in 1994 was 32 and visitor days from hunting outfitters was eight. These visitor days are included in the numbers mentioned above.


WOODHAWK WILDERNESS STUDY AREA

LEGEND

 BLM
25,966 ACRES

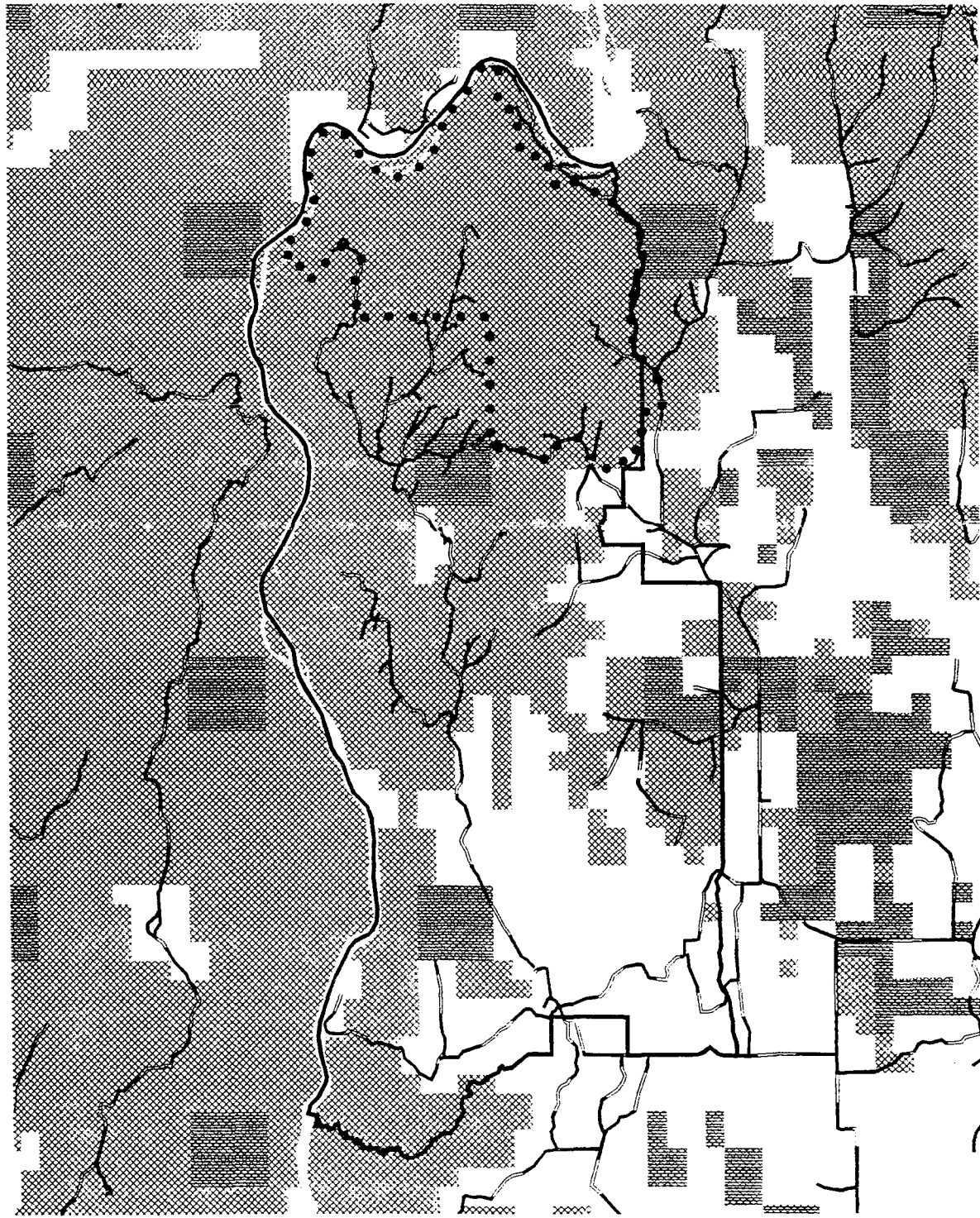
 STATE
1,767 ACRES

 PRIVATE
10,652 ACRES

 WILDERNESS
STUDY AREA
8,095 ACRES

 MANAGEMENT AREA
BOUNDARY

 ROADS AND TRAILS



Other Recreational Activities

The remainder of the planning area receives some visits from rock hounds, history buffs, wildlife viewers and other associated recreationists. However, because the area has a good population of big game species and upland game birds, the major recreation use in the uplands is hunting. The road system (see map on page 3), in and adjacent to the planning area provides good access for hunters to enjoy hunting activities on the public land. There has been a significant increase in hunters in the last five years. They frequent the area during archery and general hunting season as well as upland game bird season and also use the area during special hunts in pursuit of bighorn sheep and mountain lion. It is estimated that over 2,000 visitor days of this type are enjoyed on public lands in the Woodhawk area.

Total Visitor Use

It is estimated there are 1,300+ visitor days from floaters, and an additional 2,850+ visitor days from land based recreation for a **total of 4,200+ recreation visitor days enjoyed in the Woodhawk area.**

K. FORESTRY

In general terms, forestry in the breaks country is lacking in terms of actual "Management." Very little commercial harvest has taken place and most timber cutting has occurred in response to the need for fence posts, fuelwood, and logs for either homesteads or out buildings. Only recently (the past four to five years) with the increased demand for wood products has there been a demand for commercial cutting.

Most of the breaks country in North Fergus County contains "pockets" of commercial sawlogs. A commercial sawlog is defined as having a minimum of an 8" Diameter Breast Height (DBH) and a 6" top diameter at 16' above the ground. These "pockets" are usually located on Northerly aspects on slopes less than 35% and vary in size from a few trees to several acres of timber. Some stands of timber are located on steep slopes in excess of 35%; however, the value of the timber does not warrant the cost of moving in specialized harvest equipment. Therefore, these stands are essentially non-commercial. Another commercial wood product that is very new to Central Montana is pulpwood. Pulpwood is harvested and processed for use in paper products. A commercial pulp log is defined as having a 3" top at 25'. The opportunity to harvest pulpwood is abundant in the breaks country. Pulpwood harvest typically are in the form of commercial thinning.

L. FIRE

Historically, fire occurrence in the breaks country (prior to the advent of modern fire suppression) was classified as **High Frequency - Low Intensity**. This means that fires occurred on a frequent basis therefore allowing little fuel buildup. Since fuel loads were light, fires were low intensity and usually on the ground. These frequent ground fires created a mid serial stage forest development typical of the Missouri breaks ecosystem.

With the introduction of modern fire suppression strategies (the exclusion of fire in the natural cycle) forests are progressing from a dis-climax to climax. The serial stage open stands of Ponderosa pine are evolving to dense stands of mixed conifers consisting primarily of Ponderosa Pine, Douglas-fir and juniper. Coniferous forests are also expanding on to rangelands and diminishing available forage for wildlife and livestock.. Frequent, low intensity ground fires that once maintained forest dis-climax may be replaced with high intensity fires that could be detrimental to watersheds, soil properties and vegetation.

M. MINERALS AND ENERGY

Although there have been several oil or gas wells drilled in the planning unit, they have all been dryholes. There is moderate potential for occurrence of shallow natural gas, but there are no active leases on any federal lands. In addition, the Woodhawk WSA is closed to leasing until a decision on status is made by Congress. The nearest active production is found in the Leroy field across the UMNWSR to the north.

There are no mining claims in the planning unit, but there is some potential for occurrence of diatremes (diamond pipes) due to the presence of associated indicator minerals. The entire area of the planning unit within the UMNWSR corridor is withdrawn from locateable mineral entry under the Mining Law of 1872. In addition, the Woodhawk WSA is similarly withdrawn until the status of the area is determined by Congress.

N. LANDS/REALTY

The Bureau of Land Management continues to look for opportunities to acquire land through exchange from willing landowners within the UMNWSR Corridor. The goal is to protect critical resources for the long term, enhance the Bureau's management opportunities on public land along a nationally recognized waterway, and ensure continued recreational opportunities by the public. Currently, the Woodhawk area contains the following private lands within the UMNWSR Corridor:

T. 23 N., R. 20 E.

sec. 5: Lots 8, 9, 10

sec. 7: S2SE

sec. 8: Lot 1, NWNE

sec. 10: Lot 5

sec. 11: Lots 4, 5, NWSW

sec. 14: W2NW

sec. 15: NENE, S2N2

sec. 17: N2

sec. 18: NE, E2NW

At the present time, there is only one 40 acre tract of public land designated suitable for disposal within the Woodhawk Area, specifically:

T. 23. N, R. 20 E.

sec. 33: SWSE

However, should an opportunity arise to acquire some of the lands listed above, other tracts could be evaluated and included in an exchange if deemed suitable.

IV. ENVIRONMENTAL CONSEQUENCES

A. INTRODUCTION

This chapter describes the environmental, social and economic consequences of implementing the alternatives presented in chapter 2. There are no anticipated unavoidable adverse effects or irreversible and irretrievable commitments of resources associated with the 4 alternatives.

There would be no impact to any of the following critical elements from any of the actions/alternatives discussed in chapter 2: Air Quality, ACECs, Prime and unique farmlands, floodplains, Native American concerns, solid and hazardous wastes, environmental justice, and/or drinking and ground water quality.

B. IMPACTS FROM MANAGEMENT COMMON TO ALL ALTERNATIVES

The environmental consequences described in this section apply to all alternatives and are discussed by environmental element. This section describes those impacts from Management Common To All Alternatives and is presented here to avoid repetition. There are no impacts anticipated to hardrock minerals, oil and gas, soils, vegetation, threatened and endangered species, forestry, visual resources, wilderness, wild and scenic rivers, and economic or social conditions.

Impacts to Water Quality from Management Common

The water quality in Hart Spring would improve due to the spring source being exclosed. Trampling and defecating of the source would be eliminated.

Impacts to Riparian Areas from Management Common

The riparian area associated with Hart Spring would be expected to improve inside the exclosure.

Impacts to Livestock Grazing Management from Management Common

A small amount of forage would not be available for livestock grazing due to the exclosure around Hart Spring. However, the total amount of reduced forage availability would be insignificant to the livestock operation and there would not be a reduction in permitted grazing use levels.

Impacts to Wildlife and Wildlife Habitat from Management Common

The fence around Hart Spring will have a positive impact on wildlife. The spring should return to a natural flowing state without trampling effects of livestock. This would allow the water to pool and flow and thereby be utilized by wildlife. The three wire fence will be a minimal barrier to wildlife movement. Riparian vegetation will also become established around the spring and provide hiding/nesting cover.

Impacts to Cultural Resources from Management Common

Cultural resources and traditional cultural values would be provided protection.

Impacts to Recreation from Management Common

Improved hunting opportunities may exist inside the enclosure at Hart Spring due to increased hiding cover and browse.

C. IMPACTS BY ALTERNATIVE

This section describes the environmental consequences from implementing the alternatives presented in Chapter 2. The impacts are discussed for each environmental element by issue and alternative.

1. IMPACTS TO HARDROCK MINERALS AND OIL AND GAS

From motorized vehicle management, Woodhawk Bottom Recreation Area, hunting outfitter management, noxious plant management, livestock grazing management and paleontological resources management (All Alternatives)

None of the actions identified in any alternative would affect the availability or condition of the mineral materials or oil and gas resource.

2. IMPACTS TO WATERSHED/WATER QUALITY

From Motorized Vehicle Management Alternative 1 (Current), 2, 3 and 4 (Preferred):

No data on erosion or sedimentation has been collected from roads in the watershed. Visual observations indicate slight to moderate erosion on the road surface and adjacent borrow ditches (where present). The WSA designation, rough terrain, and amount of private land in the allotment limits motorized vehicular uses mostly to designated roads and trails. Non-point source pollution (erosion and sedimentation) from these existing roads and trails is expected to remain at an insignificant level.

From Wood hawk Bottom Recreation Area Alternative 1 (Current), 2, 3 and 4 (Preferred):

No significant impacts to watershed or water quality are anticipated from recreational facility maintenance or replacement at Woodhawk Bottom. The existing pit toilet at the lower campground will be replaced with a vault type toilet which prevents seepage of wastes into any ground waters. No public water supply currently exists or is planned.

From Hunting Outfitter Management, Noxious Plant Management and Paleontological Resources Management Alternative 1 (Current), 2, 3 and 4 (Preferred):

No impacts are anticipated to watershed condition or water quality from any alternative.

From Livestock Grazing Management Alternative 1 (Current):

The Woodhawk watershed consists of two different areas in terms of hydrology. The uplands consist of the area drained by Woodhawk Creek and its tributaries and the area drained by the tributaries of the Missouri River. Woodhawk Creek is an intermittent stream while all the tributaries to it and the Missouri River are ephemeral. The term upland vegetation refers to the vegetation both in the drainages (riparian) and in the areas between the drainages. The other hydrologic area is the shoreline immediately adjacent to the Missouri River (22 miles of shoreline in the Woodhawk watershed). Six of the 22 miles of shoreline have the potential to grow woody riparian vegetation. The remaining 16 miles is too steep and narrow to be considered significant

"riparian areas". Presently, one and one-half miles of the shoreline is exclosed permanently from livestock grazing. It is considered to be in "proper functioning condition", meaning that riparian vegetation is present and reproducing itself and performing the functions associated with healthy riparian areas. The remaining four and one-half miles of shoreline have the potential to grow riparian vegetation but heavy livestock use is preventing its establishment and regeneration. These miles rate as "non-functioning" or not healthy.

The four and one-half miles of riparian areas along the Missouri River comprise approximately 200-250 acres in total area (commonly called "bottoms"). Livestock in the east and west pastures tend to migrate to these bottoms as temperatures rise in early July. In this alternative from two to three hundred pairs would spend one half of each hot season (July, August, September) on these 200-250 acres. This concentration of livestock during the growing season would severely impact the establishment and regeneration of all riparian species associated with the bottoms.

This alternative would result in slight to moderate improvement in upland vegetation due to two consecutive years of spring rest out of every four years. The two rest years would allow the cool season bunch grasses to establish and regenerate. Additional ground cover provided by the increase in bunch grasses should slow overland flow from snow melt and rainfall allowing increased infiltration into the soil, reducing erosion, and reducing the amount of sediment reaching the adjacent streams. Both biological and chemical contaminants tend to attach to suspended sediment particles being carried downstream by the flow of water. This action is termed "non-point source pollution". Increased infiltration in the uplands would result in a slight decrease in non-point source pollution from the watershed.

The North River pasture would receive the same use every year. The cycle of continuous hot season livestock use would result in no improvement in either the uplands or the riparian areas within this pasture.

Alternative 2:

The bottoms associated with the Missouri River would receive only spring livestock use and would be rested each hot season. Even though the bottoms are accessible to livestock during the spring use, cattle tend to graze the uplands in the spring as long as forage and upland water is available. The light to moderate livestock use of the bottoms in spring only would result in a significant increase of riparian vegetation. This vegetation is vital for stream bank protection during high flow events, filtering sediment, storing ground water, and providing for a diverse vegetative community.

The east and west upland pastures would receive spring rest each year in addition to a livestock reduction of approximately 50%. Cool season plant biomass will increase significantly. The increase in vegetative cover would result in increased infiltration into the soil from snow melt and rain fall, reduced erosion and decreased sediment delivery to the adjacent streams. Impacts to the North River pasture would be the same as in Alt. #1.

Alternative 3:

This alternative is the current livestock use. The 20 year average actual use is approximately 50% of authorized use. If the operator retains the 20 year average use, no changes to either the uplands or the bottoms would occur. If the operator exercises his full preference, the uplands would exhibit a downward trend in vegetative cover and watershed health. The non-exclosed bottoms would remain in their current non-functioning condition.

Alternative 4 (Preferred):

The bottoms and the North River pasture in this alternative would receive the same benefits as in Alt. #2. The numbers of livestock in the east and west upland pastures would be approximately twice that in Alt. #2. Benefits to vegetation and watershed health would be slightly less than in Alt. #2 but a significant increase over those in Alt. #1 and #3.

3. IMPACTS TO SOIL AND VEGETATION**From Motorized Vehicle Management****Alternative 1 (Current) and Alternative 3:**

ORV seasonal restrictions on 18.7 miles of road would benefit the areas receiving most of the hunting off-road vehicle travel activity. Destruction of vegetation and creating new trails would be curtailed. Yearlong closures on 4.1 miles of spur roads in the WSA would protect the soil and vegetation from potential damage.

ORV use would be expected to increase on the 19.9 miles of road open yearlong, causing increased soil erosion due to destruction of vegetation. Overall, such erosion would not represent a significant loss of soil. The potential of introductions of noxious weeds into upland areas would be high.

Alternative 2:

Under this alternative, the majority of the roads in the watershed would be seasonally restricted or closed to ORV use. This would result in significant recovery of locally impacted areas and prevent further degradation of soil and vegetation. The risk of introduction of noxious weed infestations into upland areas would be greatly reduced.

Alternative 4 (Preferred):

The impacts would be similar to Alternatives 1 and 3, however more miles of road would be seasonally restricted or closed under this alternative. The potential for introduction of noxious weed infestations into upland areas would be reduced.

From Wood hawk Bottom Recreation Area**Alternative 1 (Current), 2 and 3:**

Minimal impacts to vegetation and soils would be expected. Occasionally mowing could increase the risk of spreading noxious weeds and remove some desirable understory species however, such activity would be limited to existing campsites and would be insignificant when considered on a watershed basis. Occasional tree trimming would remove some overstory, but would not be expected to kill trees or reduce overall species abundance.

There would continue to be impacts to riparian vegetation from the lower campground road. In addition, centralized camping and boat launching in this area would inhibit riparian area succession.

Alternative 4 (Preferred):

Most of the impacts would be similar to the other alternatives, however some minor soil disturbance and vegetation removal would occur during toilet, picnic table and cooking/warming unit placement.

Fence construction between the middle and upper campgrounds would allow the existing road to revegetate.

Reconstruction of the access road through the lower campground would temporarily remove some vegetation but in the long term, would prevent damage to riparian vegetation. Preventing boats from launching at this area would also benefit riparian area development.

From Hunting Outfitter Management

Alternative 1 (Current), 2, 3 and 4 (Preferred):

Impacts to vegetation and soils primarily are related to ORV use and are therefore similar those discussed above.

From Noxious Plant Management

Alternative 1 (Current), 2 and 3:

Noxious weed infestations would continue to expand, primarily along the river. Some infestation would be expected to occur in upland areas and increase in size on an annual basis. In the long term (within 20 years) native upland and understory riparian species would be replaced by noxious weeds.

Alternative 4 (Preferred):

In the short term, noxious weed infestations would continue to expand along the river, but should begin to decline as biologic control agents become established (10-20 years) in significant populations. Noxious weed expansion into upland areas would be curtailed.

From Paleontological Resources Management

Alternative 1 (Current), 2 and 3:

No impacts are expected to occur to vegetation. Some minor soil disturbance would be expected from casual collection of invertebrate fossils.

Alternative 4 (Preferred):

Some soil disturbance and vegetation removal would be expected from roads constructed to remove paleontological resources. Proper reclamation would mitigate this concern. In addition, some soil and vegetation would be removed during excavation of specimens, however most of this activity would occur in areas already experiencing active geologic erosion so impacts would be insignificant.

From Livestock Grazing Management

Alternative 1 (Current):

Plant vigor, cover and upland range condition would generally improve slowly (10-20 years). Communities in mid seral status would slowly progress to late seral communities. Early seral communities would not progress without mechanical manipulation. Communities in late seral status would slowly progress to the potential natural community.

Riparian areas would probably remain static and very little, if any woody species regeneration would be expected. Heavy use levels would be expected to herbaceous riparian components along the river and in the long term many riparian communities would become drier and upland

species would begin to increase.

Noxious weeds would continue to expand along the river, but should be insignificant in the uplands.

Soil surface compaction caused by livestock use during the spring would be reduced. Accelerated erosion and sediment yield attributed to bare ground would decrease.

Alternative 2:

Plant vigor, cover and upland range condition would generally improve fairly rapidly (5 years or less). Communities in mid seral status would progress to late seral communities. Communities in late seral status would progress to the potential natural community. Early seral communities would not progress without mechanical manipulation.

Riparian areas would advance successional and woody species regeneration would be expected. Moderate use levels would be expected to herbaceous riparian components along the river and in the long term many riparian communities would become wetter and riparian species would begin to increase.

Upland are soil surface compaction caused by livestock use during the spring would be reduced. Accelerated erosion and sediment yield attributed to bare ground would decrease.

Alternative 3:

Plant vigor, cover and upland range condition would generally not improve or in many cases would degrade.

Riparian areas would not advance successional and would continue to degrade in many cases.

Heavy use levels would be expected to herbaceous riparian components along the river and in the long term many riparian communities would become drier and upland species would begin to increase.

Noxious weeds would continue to expand along the river and into the uplands.

Soils surface compaction caused by livestock grazing in the early spring would increase or continue. Accelerated erosion and sediment yield attributed to bare ground would

Alternative 4 (Preferred):

Plant vigor, cover and upland range condition would generally improve fairly rapidly, but not as fast as in alternative 2 (10 years or less). Communities in mid seral status would progress to late seral communities. Communities in late seral status would progress to the potential natural community. Early seral communities would not progress without mechanical manipulation.

Riparian areas would advance successional and woody species regeneration would be expected. Moderate use levels would be expected to herbaceous riparian components along the river and in the long term many riparian communities would become wetter and riparian species would begin to increase.

Upland are soil surface compaction caused by livestock use during the spring would be reduced. Accelerated erosion and sediment yield attributed to bare ground would decrease.

4. IMPACTS TO LIVESTOCK GRAZING MANAGEMENT

From Motorized Vehicle and Hunting Outfitter Management

Alternative 1 (Current), 2, 3 and 4 (Preferred):

All alternatives would provide some benefit to livestock. Limited vehicular use would prevent harassment and disruption of grazing patterns. Alternative 2 would provide the most benefit, Alternative 4 (preferred) would provide some benefit and Alternatives 1 and 3 would provide the least benefit.

From Woodhawk Botton Recreation Area

Alternative 1 (Current), 2, 3 and 4 (Preferred):

No impacts to livestock grazing anticipated.

From Noxious Plant Management

Alternative 1 (Current), 2 and 3:

Significant impacts would be expected in the long term as native vegetation would be replaced by noxious weeds and the forage base would be reduced.

Alternative 4 (Preferred):

In the short term, minor impacts to the forage base would be anticipated, primarily along the river. However, as biologic control agents become established (10-20 years) in significant populations, this impact should decline significantly.

From Paleontological Resources Management

Alternative 1 (Current), 2, and 3:

No impacts anticipated

Alternative 4 (Preferred):

Some minor disruption of livestock grazing patterns would be anticipated, however no long term loss of forage would be expected.

From Livestock Grazing Management

Alternative 1 (Current):

There would be some additional livestock management required under this alternative, primarily due to rotating grazing use between pastures. The construction of the short drift fence would require maintenance by the permittee.

No impacts would be anticipated to permitted use.

Alternative 2:

There would be additional livestock management required under this alternative, primarily due to rotating cattle between 3 pastures. The construction of the watersavers and the fence between the upland and riparian pastures would require maintenance.

Significant impacts would occur to the economic viability of the livestock operation as permitted use would be reduced to the 21 year average actual use. In addition, the livestock operation would change because the majority of the cattle would have to be held on private lands outside of the watershed until June 15.

Some impacts to the operation would be expected if guidelines were exceeded. The permittee would be required to move cattle and could reach guidelines prior to the end of the authorized grazing period. If this occurred, the permittee would have to lease pasture or move the cattle onto private lands outside of the watershed. The grazing permittee would have to spend more time observing the condition of the vegetation and conducting monitoring.

Alternative 3:

No impacts anticipated.

Alternative 4 (Preferred):

There would be additional livestock management required under this alternative, primarily due to rotating cattle between 3 pastures. The construction of the watersavers and the fence between the upland and riparian pastures would require maintenance.

Some impact would occur to the economic viability of the livestock operation because the permittee would be required to take nonuse of some forage base when riparian pastures are rested. In addition, the livestock operation would change because the majority of the cattle would have to be held on private lands outside of the watershed until June 15.

Some impacts to the operation would be expected if guidelines were exceeded. The permittee would be required to move cattle and could reach guidelines prior to the end of the authorized grazing period. If this occurred, the permittee would have to lease pasture or move the cattle onto private lands outside of the watershed. The grazing permittee would have to spend more time observing the condition of the vegetation and conducting monitoring.

5. IMPACTS TO WILDLIFE/HABITAT/THREATENED AND ENDANGERED SPECIES

From Motorized Vehicle Management Alternative 1 (Current), Alternative 2, Alternative 3, Alternative 4 (Preferred):

The following analysis is common to all motorized vehicle management alternatives. The following analysis uses all affected habitat in the planning area regardless of land ownership. There are 32,569 acres of elk and mule deer habitat and 18,011 acres of bighorn sheep habitat in the planning area. Elk are particularly susceptible to disturbance during hunting seasons and calving seasons. The number of miles and locations of roads open within elk habitat can positively or negatively affect the quality of habitat. Essentially, the habitat quality declines as the density of roads increases. In the planning area, roads tend to go down every point and they are used frequently by hunters trying to see the animals. This has a negative effect on the animals because they essentially have no where to hide from people. There are a number of impacts to elk which include: greater number of bulls being taken during hunting seasons, animals being forced away from high quality habitat into lower quality habitat, high stress during the rutting season which could lead to lower spring calving numbers, bulls and cows entering winter under stress may not make it through the winter. Mule deer are also impacted by the roads in similar ways but the degree of impact is somewhat lessened due to their behavior. There are fewer roads within the bighorn sheep habitat but they too are susceptible to similar disturbance especially during the hunting season.

The following impact analysis is done based on a 1/2 mile buffer zone from the road. Impact analysis also considers all land ownership whether it can be affected or not by road closures. The roads which can not be closed either permanently or seasonal due to land ownership are shown on the habitat maps and included in the analysis.

Alternative 1 (Current) and Alternative 3:

Roads Open Yearlong

There are numerous roads in the planning area which negatively impact approximately 21,600 acres of elk and mule deer habitat (see map on page 77).

Roads with Seasonal Restriction

These roads impact approximately 17,854 acres of elk and mule deer habitat (see map on page 78). The seasonal restrictions of the listed roads will have a positive impact on big game during the hunting season. The total habitat affected is less with some restriction. Roads will be restricted which will allow easier movements of animals in the planning area. Game retrieval for hunters during certain times of the day will have a slightly negative impact on big game.

Alternative 2:

Roads Open Yearlong

These roads negatively impact approximately 16,822 acres of elk and mule deer habitat (see map on page 79). Some of these roads have been permanently closed which will have a positive impact on wildlife by further protecting important habitat and providing big game security.

Roads with Seasonal Restrictions

These roads negatively impact approximately 14,866 acres of elk and mule deer habitat (see map on page 80). The seasonal restriction is not placed during the critical fall period but many roads are permanently closed which results in a positive impact on wildlife.

Alternative 4 (Preferred):

Roads Open Yearlong

These roads negatively impact approximately 19,439 acres of elk and mule deer habitat (see map on page 81).

Roads with Seasonal Restrictions

There are two seasonal restriction time periods. The first is from Sept. 1- Nov. 30 which will impact approximately 16,822 acres of elk and mule deer habitat (see map on page 82). The second seasonal restriction is from Dec. 1 through April 14 (see map on page 83). The roads affected by this will have little impact on wildlife because there is less human pressure on the animals during this time period and often times the roads are impassable with snow except by snowmobile.

From Wood hawk Botton Recreation Area

Alternative 1 (Current) and Alternative 3:

Lower Campground

This area is already minimally improved with existing developments and several campsites. It

ELK HABITAT, ALTERNATIVES 1 AND 3, W/O SEASONAL RESTRICTION

LEGEND



MANAGEMENT AREA
BOUNDARY



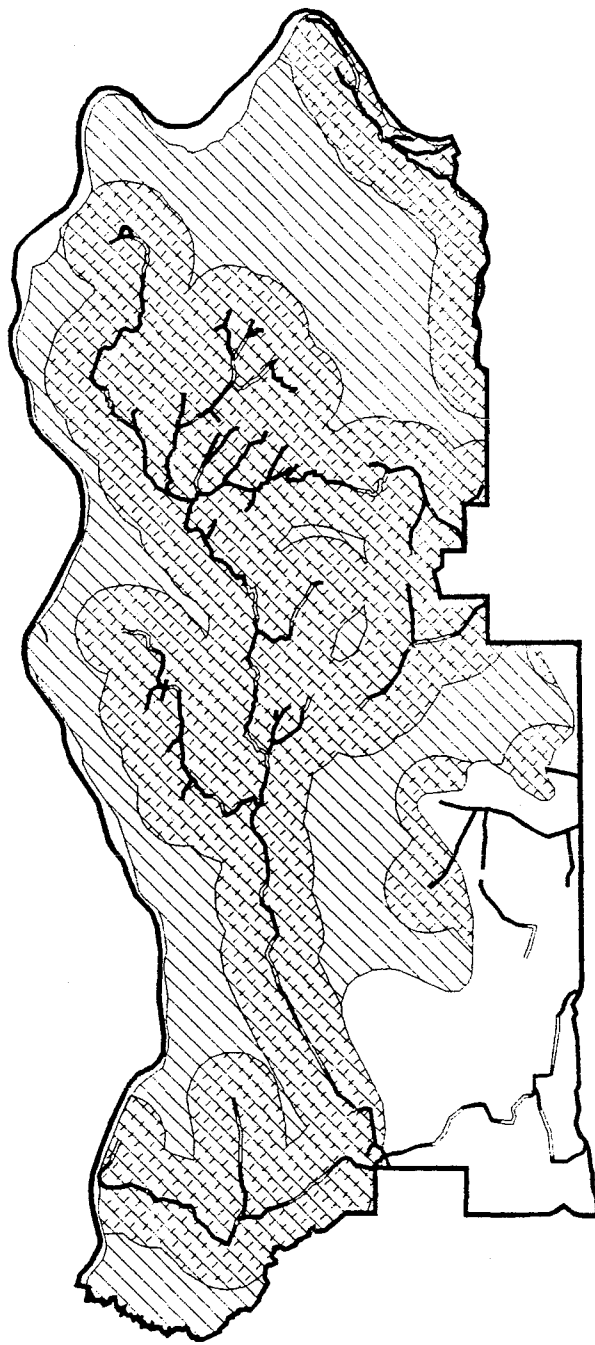
ROADS LEFT OPEN
62.3 MILES OF ROAD



ELK HABITAT
32,569 ACRES



HABITAT EFFECTED
DUE TO ROADS
21,600 ACRES



ELK HABITAT, ALTERNATIVES 1 AND 3, SEP 1 - NOV 30 RESTRICTION

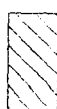
LEGEND



MANAGEMENT AREA
BOUNDARY



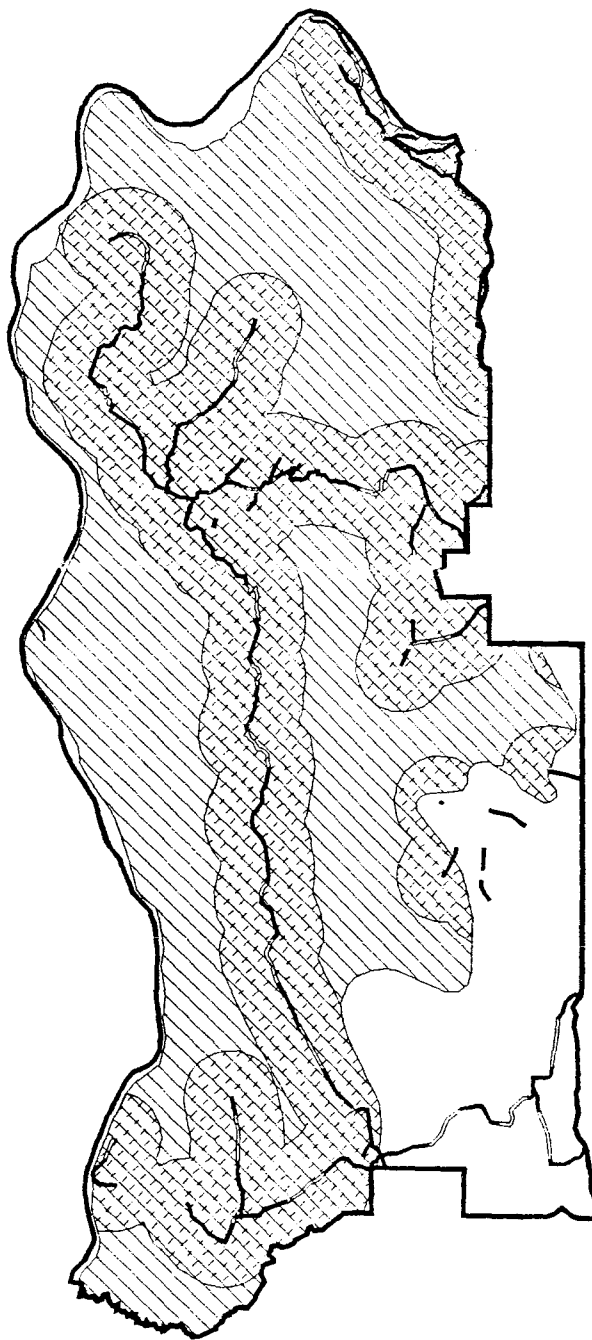
ROADS LEFT OPEN
43.7 MILES OF ROAD



ELK HABITAT
32,569 ACRES



HABITAT EFFECTED
DUE TO ROADS
17,854 ACRES



ELK HABITAT, ALTERNATIVE 2, W/O SEASONAL RESTRICTION

LEGEND



MANAGEMENT AREA
BOUNDARY



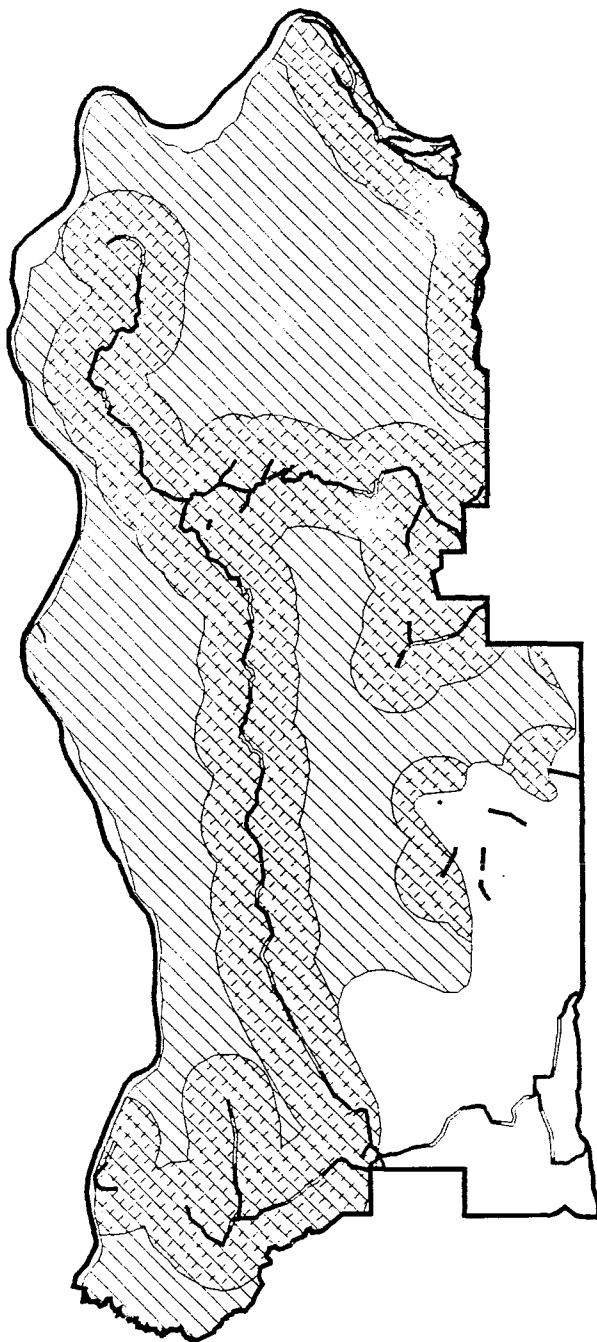
ROADS LEFT OPEN
41.4 MILES OF ROAD



ELK HABITAT
32,569 ACRES



HABITAT EFFECTED
DUE TO ROADS
16,822 ACRES



ELK HABITAT, ALTERNATIVE 2, DEC 1 - APR 15 RESTRICTION

LEGEND



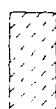
MANAGEMENT AREA
BOUNDARY



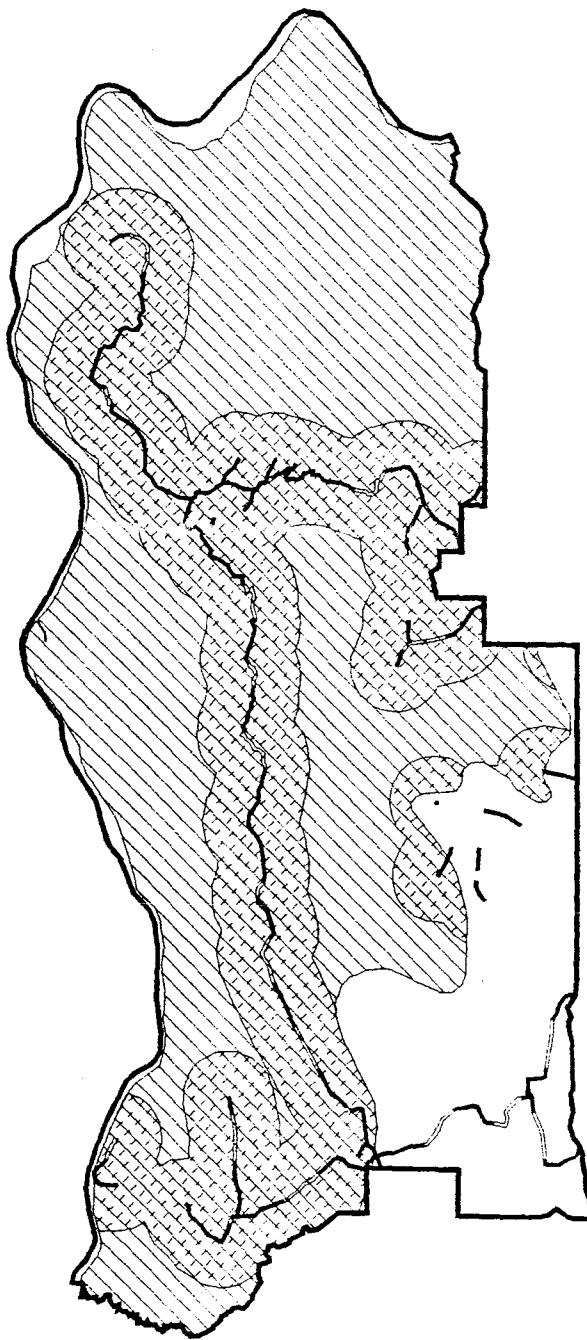
ROADS LEFT OPEN
35 MILES OF ROAD



ELK HABITAT
32,569 ACRES



HABITAT EFFECTED
DUE TO ROADS
14,866 ACRES



ELK HABITAT, ALTERNATIVE 4, W/O SEASONAL RESTRICTIONS

LEGEND



MANAGEMENT AREA
BOUNDARY



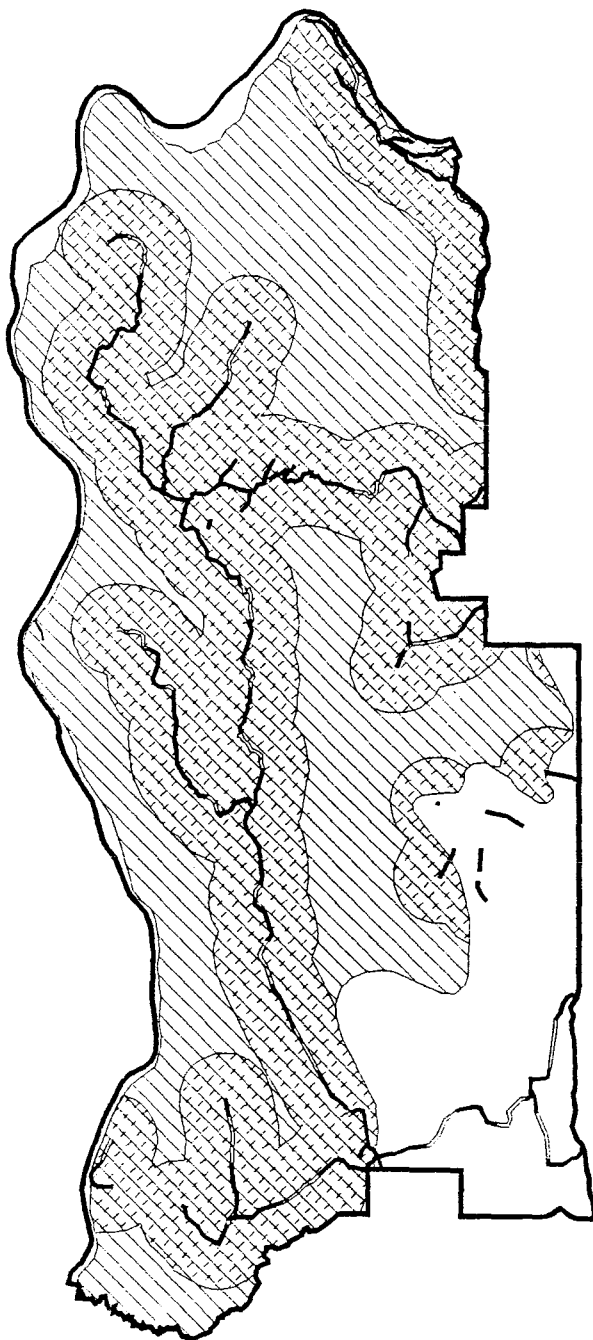
ROADS LEFT OPEN
47 MILES OF ROAD



ELK HABITAT
32,569 ACRES



HABITAT EFFECTED
DUE TO ROADS
19,439 ACRES



ELK HABITAT, ALTERNATIVE 4, SEP 1 - NOV 30 RESTRICTION

LEGEND



MANAGEMENT AREA
BOUNDARY



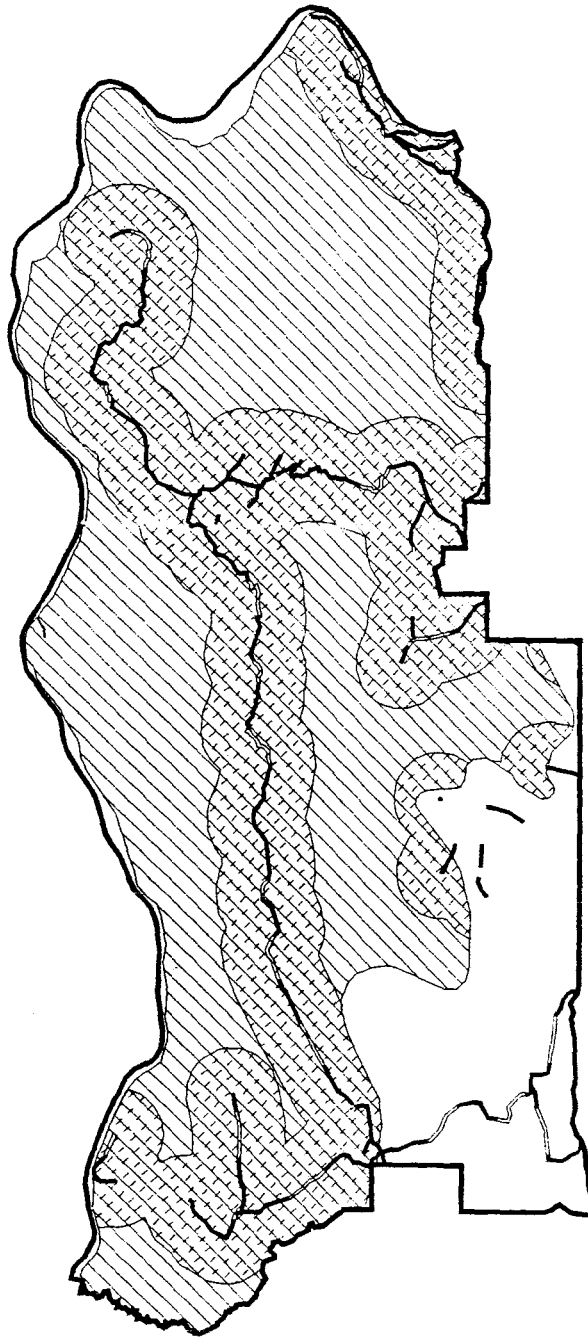
ROADS LEFT OPEN
41.4 MILES OF ROAD



ELK HABITAT
32,569 ACRES



HABITAT EFFECTED
DUE TO ROADS
16,822 ACRES



ELK HABITAT, ALTERNATIVE 4, DEC 1 - APR 15 RESTRICTION

LEGEND



MANAGEMENT AREA
BOUNDARY



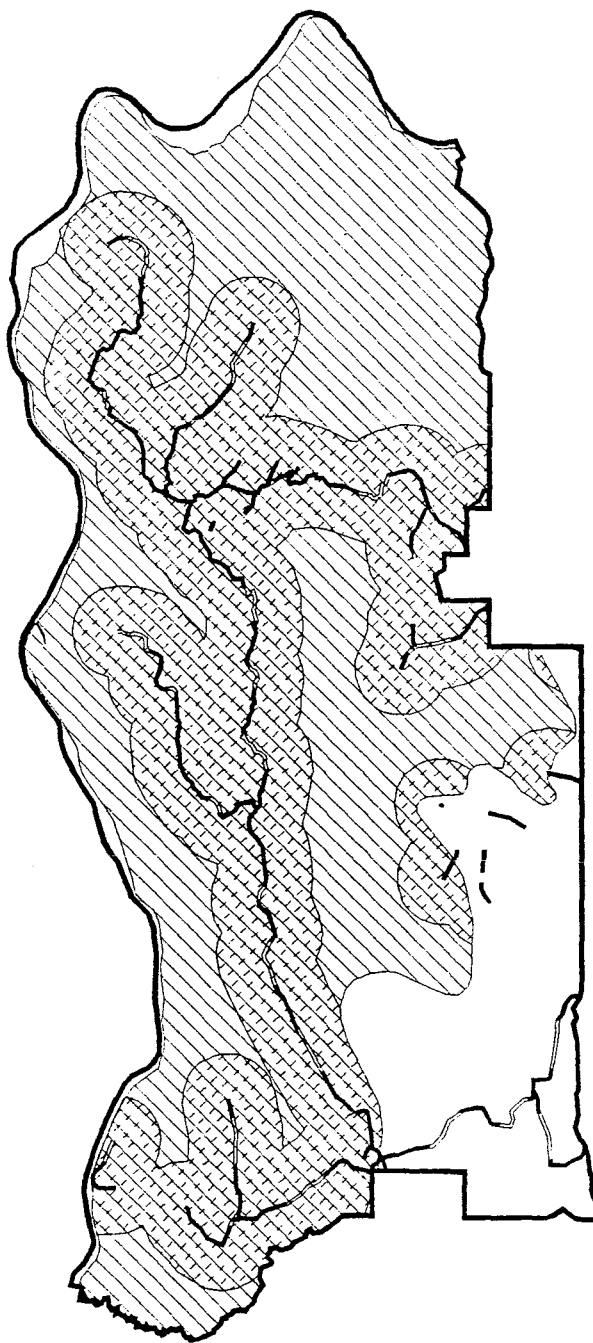
ROADS LEFT OPEN
40.8 MILES OF ROAD



ELK HABITAT
32,569 ACRES



HABITAT EFFECTED
DUE TO ROADS
17,482 ACRES



appears that the area receives light use which may increase slightly to moderately with the proposed improvements. There will be no negative impacts to wildlife as a result of replacing what is already there. There will be positive impacts to an endangered species, the pallid sturgeon, as a result of allowing trees to fall into the river. Mowing the campsites will have a slightly negative impact on wildlife by reducing ground cover but since it is in such a small area it is negligible.

Middle Campground

This area has no toilet and only one obvious camp area which is defined at the end of the road. There are numerous mature cottonwoods which provide excellent habitat especially for non game birds. There is a newly established cottonwood stand adjacent to the UMNWSR which will provide habitat for wildlife as it matures. There is a sauger spawning area just upstream from this area. There will be moderate negative impacts to wildlife as a result of the improvements to this area. There will be positive impacts to an endangered species, the pallid sturgeon, as a result of allowing trees to fall into the river. Mowing the campsites will have a slightly negative impact on wildlife by reducing ground cover but since it is in such a small area it is negligible.

Upper Campground

There will be no negative impacts to wildlife as a result of replacing what is already there. There will be a positive impact to wildlife as a result of not mowing the area, it will provide hiding and/or nesting cover for many species.

Alternative 2:

There will be no impact to wildlife by maintaining what is already there. There appears to be light use at the campground and that would not be anticipated to increase dramatically.

Alternative 4 (Preferred):

Lower Campground

This area is already minimally improved with existing developments and several campsites. It appears that the area receives light use which may increase slightly to moderately with the proposed improvements. There will be no negative impacts to wildlife as a result of replacing what is already there. There will be positive impacts to an endangered species, the pallid sturgeon, as a result of allowing trees to fall into the river. Mowing the campsites will have a slightly negative impact on wildlife by reducing ground cover but since it is in such a small area it is negligible.

Middle Campground

There will be no negative impacts to wildlife from the proposed action. There will be positive impacts to an endangered species, the pallid sturgeon, as a result of allowing trees to fall into the river.

Upper Campground

There will be no negative impacts to wildlife as a result of removing what is there now. There will be a positive impact to wildlife as a result of not mowing the area, it will provide hiding and/or nesting cover for many species.

dividing up the habitat and by creating a physical barrier to movements. However, the three wire fence that is planned will have the least impact on big game species. It is easiest for animals to move through a three wire fence. The water which is currently developed is a positive impact for wildlife species, numerous animals use the existing water. There are no plans to develop any new water as the old ones fail, this will have a negative impact on wildlife also.

Alternative 3:

The proposed grazing management will have a negative impact on wildlife by negatively impacting riparian vegetation. This method takes full advantage of all available water early in the spring and allows no rest for crucial riparian areas. There will be no chance for riparian vegetation to establish and grow. Riparian values are extremely important for wildlife present in the area, this system would have a negative impact on wildlife.

Alternative 4 (Preferred):

The proposed grazing system will have a positive impact on wildlife species. It will protect the riparian habitat which is crucial for many non-game species, waterfowl, pheasants, and big game species. It will also continue habitat for bald eagle nesting/roosting trees and future pallid sturgeon habitat.

The deferred rotation system in the uplands will allow one pasture substantial rest every other year. This will allow the grasses, forbs, and shrubs to grow for a long period of time without grazing pressure. The upland pastures should show improvement in vegetative condition which will be good for predators, upland game species and neotropical migratory birds.

The proposed fence will have a negative impact on wildlife and particularly big game by further dividing up the habitat. However, the three barbed wire fence that is planned will have the least impact on big game species.

Plans for alternative sources for water will be beneficial to wildlife species which also use these water sources. It should be noted that escape ramps should be placed on any tanks put into the area to prevent accidental wildlife drowning. Continuing to provide water sources in this area is essential to wildlife especially in the late summer when natural sources dry up.

6. IMPACTS TO FORESTRY

From Motorized Vehicle Management

All Alternatives:

The availability of forest resources to be included in timber and woodland commercial and noncommercial sales could be affected by permanent and seasonal road closures as buyres would be required to comply with restrictions. Therefore these types of sales would not be offered.

From Woodhawk Bottom Recreation Area, hunting outfitter management, noxious plant management, livestock grazing management and paleontological resources management (All Alternatives)

None of the actions identified in any alternative would affect the availability or condition of the commercial or noncommercial timber and woodland resources.

From Hunting Outfitter Management

Alternative 1 (Current) and Alternative 3:

Impacts to wildlife could be severely negative depending on the number of requests for outfitting. If left unregulated, the outfitted hunter numbers could rise significantly, reducing the big game numbers.

Alternative 2 and Alternative 4:

There will be slightly positive impacts to big game wildlife species by regulating the number of outfitters and the total number of outfitter days. This will eliminate a potential problem with the area being overhunted by outfitted recreationists. Big game habitat will be protected with the off-road vehicle restrictions.

From Noxious Plant Management

Alternative 1 (Current), Alternative 2, Alternative 3 and Alternative 4 (Preferred):

No impact to wildlife

From Paleontological Resources Management

Alternative 1 (Current), Alternative 2, and Alternative 3:

No impact to wildlife

Alternative 4 (Preferred):

There is potential for negative impacts to wildlife if a significant find is made in the area. The road building would displace wildlife.

From Livestock Grazing Management

Alternative 1 (Current):

Upland pastures should show some improvement in vegetative condition which will be good for predators, upland game species and neotropical migratory birds. But under this system, the riparian areas are not protected which would have a negative impact on wildlife. Most wildlife species are dependent on water and riparian areas for a portion of their time, some are more tied to it than others. It is crucial to provide healthy riparian areas for wildlife. Grazing would be allowed in a pasture until August 15th which would not allow the riparian vegetation a chance to recover from grazing pressure and grow sufficiently.

Alternative 2:

The proposed grazing system will have a positive impact on wildlife species. It will protect the riparian habitat which is crucial for many non-game species, waterfowl, pheasants, and big game species. It will also continuing habitat for bald eagle nesting/roosting trees and future pallid sturgeon habitat.

The deferred rotation system in the uplands will allow one pasture substantial rest every other year. This will allow the grasses, forbs, and shrubs to grow for a long period of time without grazing pressure. The upland pastures should show improvement in vegetative condition which will be good for predators, upland game species and neotropical migratory birds.

The proposed fence will have a negative impact on wildlife and particularly big game by further

7. IMPACTS TO CULTURAL RESOURCES

From Motorized Vehicle Management

Alternative 1 (Current), Alternative 2, :Alternative 3, and Alternative 4 (Preferred):

Roads open yearlong have the potential for cultural resource damage, caused by erosion and vandalism. Effects could be mitigated by data recovery. The impacts would be minor.

Roads with seasonal restrictions would reduce potential cultural resource damage caused by erosion and vandalism. Effects could be mitigated by data recovery; a positive impact.

Roads with yearlong closure would minimize the damage to the cultural resource caused by erosion and vandalism; a positive impact.

From Wood hawk Botton Recreation Area

Alternative 1 (Current), Alternative 3, and Alternative 4 (Preferred):

Recreation facility improvements have the potential to have an effect upon cultural resources; a negative impact.

The proposed improvements could potentially disturb the context in which the cultural resources are found. However, standard operating procedures(National Historic Preservation Act) would allow for the retrieval of resource information, thus mitigating effects and reducing the negative impacts.

Alternative 2:

This alternative has the least potential for resource damage and any negative impacts would be minor.

From Hunting Outfitter Management

Alternative 1 (Current) and Alternative 3:

Outfitter "camping areas" and "off road game retrieval" could create negative impacts to the cultural resource by increasing damage and vandalism. Any potential impacts could be mitigated by avoidance or data recovery. Negative impacts would be minimal.

Alternative 2 and Alternative 4 (Preferred):

No "off road game retrieval" or "cross country travel" restrictions are positive impacts.

Limiting the number of outfitters (3max.) would reduce the potential for cultural damage and vandalism. Avoidance or data recovery would lessen any negative impacts.

From Noxious Plant Management - All Alternatives

No impacts to the cultural resource.

From Paleontological Resources Management

Alternative 1 (Current), Alternative 2, Alternative 3:

No impacts to the cultural resource.

Alternative 4 (Preferred):

Paleontological "site excavation" and "road construction" would have the potential for cultural resource damage. Standard operating procedures (National Historic Preservation Act) would reduce the potential impacts. Data recovery would be a positive impact.

From Livestock Grazing Management

All Alternatives:

Overall, any negative impacts to the cultural resource, caused by livestock trampling would be minimal, except in the following instances: The greatest potential for damage, caused by livestock trampling, would be at or near livestock watering facilities, such as, reservoirs, springs, watersaver stocktanks, pipeline stocktanks, and the banks of the Missouri River.

The potential for negative impacts to the cultural resource from proposed range improvements varies with the amount of ground surface disturbance, location, and the type of development. Standard operating procedures (National Historic Preservation Act) would reduce the potential for negative impacts.

Alternative 1 (Current):

The proposed fencing would have a minor impact, Re-routing of the fence or data recovery would be a mitigating measure and have a positive impact.

Alternative 2:

The proposed watersavers and fencing would have the potential to effect the cultural resource. Avoidance or data recovery would minimize or eliminate negative impacts to the cultural resource.

Alternative 3:

No impacts to the cultural resource would occur. No new range improvements are proposed.

Alternative 4 (Preferred):

The proposed well & pipeline, watersavers, and fencing would have the potential to impact the cultural resource. Avoidance or data recovery would minimize or eliminate potential negative impacts.

8. IMPACTS TO RECREATION

From Motorized Vehicle Management

Alternative 1 (Current) and 3:

Road numbering would benefit visitors in the awareness of road closures. Allowing game retrieval would be a positive impact to hunters who don't want to pack game but would be a negative impact to visitors who want solitude and an area to hunt where motorized vehicles do not spook game. Restricting camping to a distance of 100 yards of open roads is a negative impact to visitors who want camp off the roads but, a positive impact to visitors who don't want hunters camping where they are hunting. Restricting camping would eliminate vehicle travel off roads during inclement weather which would improve visitor safety. It would also improve visitor safety by not having hunters camped where other hunters may be shooting at game.

Roads Open Yearlong

The 19.9 miles of road open yearlong to motorized vehicles would be a positive impact to visitors who enjoy driving to hunt or view scenery, wildlife or other resources found in the management area. This alternative has more open roads than alternatives 2 and 4. It would allow physically challenged, elderly and the young who are not capable of walking the opportunity to enjoy those recreational activities.

The roads open year long to motorized vehicles would be a negative impact to visitors who enjoy an opportunity to get away from multitudes of people and motorized vehicles.

Roads with Seasonal Restrictions and year long closures

The 18.7 miles of roads with seasonal restrictions and the 4.1 miles of road with yearlong closure would provide opportunities for solitude and a physical challenge. This would provide hunters an opportunity to harvest an older or trophy animal which many consider to be a quality experience and hunt. Year long and seasonally closed roads would be a negative impact on physically challenged, elderly and the young who are not capable of walking and to hunters who have in the past been able to drive on roads that are now closed. Seasonal restrictions would eliminate vehicle travel on roads during inclement weather during hunting season which would improve visitor safety.

Alternative 2:

Road numbering would be a benefit to visitors in the awareness of road closures. No off road travel and no game retrieval would have a negative impact on the elderly, disabled and young who can not walk and hunters who can't or don't want to pack dead game. These restrictions would have a positive impact on visitors who want solitude and an area to hunt where motorized vehicles do not spook the game. Restricting camping to a distance of 100 yards of open roads would be a negative impact to visitors who want to camp off the roads but a positive impact to hunters who don't want others camping where they are hunting. Restricting camping would eliminate vehicle travel off roads during inclement weather which would improve visitor safety.

Closing of the road to the Woodhawk Bottom recreation area from December 1 to April 1 would have a negative impact on visitors who want to use the area during that time period. The greatest impact would be to people wanting to fish in the spring. The closure would prohibit visitors from using the area when the access road is not passable and would be a positive impact to visitor safety.

Roads Open Yearlong

The 11.3 miles of roads open yearlong to motorized vehicles would be a benefit to visitors who enjoy driving to hunt or view scenery, wildlife or other resources found in the management area. It would allow physically challenged, elderly and the young who are not capable of walking the opportunity to access a portion of the watershed. The roads open yearlong to motorized vehicles would be a negative impact to visitors who enjoy an opportunity to get away from multitudes of people and motorized vehicles.

Roads with Seasonal Restrictions and year long closures

The 6.3 miles of roads with seasonal restrictions and the 25 miles of road with year long closure would provide opportunities for solitude and a physical challenge. This would provide hunters an opportunity to harvest an older animal which many consider to be a

quality experience and hunt. This alternative has the most road closures and restrictions and would have the greatest positive impact on these individuals. Seasonal restrictions would eliminate vehicle travel on roads during inclement weather which would be a positive impact by improving visitor safety.

Roads that are closed year long or seasonally would have a negative impact on physically challenged, elderly and the young who are not capable of walking. It could also be a negative impact to hunters who have in the past been able to drive on roads that will be closed. This alternative has the most road closures and restrictions and would have the greatest negative impact on these individuals.

Alternative 4 (Preferred):

The information/interpretive sign at the head of the main trails would be a positive impact to all visitors. Road numbering would be a positive impact by assisting visitors in the awareness of road closures. Game retrieval would be a positive impact to hunters who don't want to pack game. Game retrieval would be a negative impact to visitors who want solitude and an area to hunt where motorized vehicles do not spook the game. Restricting camping to a distance of 100 yards of open roads would be a negative impact to visitors who want camp off the roads but a positive impact to hunters who don't want others camping where they are hunting.

Roads Open Yearlong

The 11.3 miles of year long roads open to motorized vehicles would be a positive impact to visitors who enjoy driving to hunt or view scenery, wildlife or other resources found in the management area. It would allow physically challenged, elderly and the young who are not capable of walking the opportunity to view resources found in the watershed.

The roads open year long to motorized vehicles would be a negative impact to visitors who enjoy an opportunity to get away from multitudes of people and motorized vehicles. The negative impact from this alternative is less than the existing situation.

Roads with Seasonal Restrictions and year long closures

The 6.3 miles of roads with seasonal restrictions and the 19.4 miles of road with year long closure would provide opportunities for solitude and a physical challenge. This would provide hunters an opportunity to harvest an older animal which many consider to be a quality experience and hunt. This alternative has more road restrictions and closures than the existing situation and would have a greater positive impact on these individuals. Seasonal restrictions would eliminate vehicle travel on roads during inclement weather which would improve visitor safety.

Year long and seasonally closed roads would be a negative impact on physically challenged, elderly and the young who are not capable of walking. It would also be a negative impact to visitors who have in the past been able to drive on roads that are now closed or restricted. This alternative would have a greater negative impact on these individuals than the current situation.

From Wood hawk Botton Recreation Area

Alternative 1 (Current), 2 and 3:

These alternative(s) continue the use of existing facilities such as pit toilets and fire rings.

Pit toilets have a displeasing odor that creates a negative impact to visitors recreation enjoyment. There is also a potential safety hazard from the toilet affluent draining into the soil and water table. The pit toilet is not accessible to the disabled and would be a negative impact to those individuals. A negative safety impact could result from rodents who inhabit pit toilets by spreading hantavirus to visitors

The use of fire pits (ring of rocks) is a negative impact. The rocks create safety hazards to visitors who may fall on the rocks or in the holes resulting from the camp fires. Visitors also move the rocks to areas of their liking causing additional impacts on the vegetation and soils.) When heated, rocks may also crack and fly into the air causing additional safety hazards. The rocks do somewhat contain campfires reducing the potential of wild fire.

The removal of hazard trees and limbs will be a positive impact by making a safer camping experience. Periodic mowing of grass will be a positive impact by removing potential cover for snakes and ticks. It will also reduce fire hazard potentials.

Alternative 4 (Preferred):

Maintaining the exclosure fences would be a positive impact to recreationists. It will reduce livestock recreation conflicts and eliminate cow manure and insects in the camping areas.

Closing of the recreation area from December 1 to April 1 would have a negative impact on visitors who want to use the area during that time period. The greatest impact would be to people wanting to fish in the spring. The closure would prohibit visitors from using the area when the access road is not passable which would be a positive impact to visitor safety.

Maintenance of the access road will reduce the chances of vehicle accidents and/or damage to visitors vehicles. The roads will still be a hazard during wet weather.

Lower Campground

Replacement of the pit toilet with an accessible vault toilet will confine the human waste and provide a safe clean facility for all visitors including those confined to a wheel chair. The concrete structure will be easy to maintain and resistant to weathering and vandalism.

The new concrete picnic tables will help disperse visitor concentrations while providing safe clean camping opportunities.

The cooking/warming units will contain fires while allowing campers the opportunity to have a warming fire or a cooking fire resulting in a positive impact to visitors. The units will eliminate the need for hazardous pits and fire rings.

The removal of hazard trees and limbs will be a positive impact by making a safer camping experience. Periodic mowing of grass will be a positive impact by removing potential cover for snakes and ticks. It will also reduce fire hazard potentials.

The improvements will have a positive impact on visitors who desire developments at a campsite. There would be a negative impact to visitors desiring a primitive camping experience, however managing the upper campground as a primitive sight would reduce this impact. The majority of the visitors at this site come by land access and desire more developments than floaters resulting in a positive impact.

Middle Campground

The cooking/warming units will contain fires while allowing campers the opportunity to have a warming fire or a cooking fire. The units will also eliminate the need for hazardous pits and fire rings.

The removal of hazard trees and limbs will be a positive impact by making a safer camping experience. Periodic mowing of grass will be a positive impact by removing potential cover for snakes and ticks. It will also reduce fire hazard potentials.

Upper Campground

The removal of the pit toilet could cause concentrations of human waste which could create negative impacts and health concerns. By having no developments there will be a positive impact to visitors who desire a primitive camping experience and can avoid the lower campsite where there are land based visitors.

From Hunting Outfitter Management

Alternative 1 (Current) and 3:

This alternative would have a positive impact on outfitters by placing no constraints on the number of outfitters. However, negative impacts will take place when the number of outfitters in the area reaches a point that will create conflicts among themselves or with other non outfitted hunters and the livestock permittee.

Alternative 2 and 4 (Preferred):

Restricting outfitter numbers could have a future negative impact on outfitters who may want to use the watershed. There would be no immediate impacts as there are only three active outfitters in the watershed.

Limiting outfitter numbers could have a positive impact by avoiding conflicts between outfitted hunters and non outfitted hunters. It could also reduce potential conflicts between the permittee and outfitters by reducing trespass of clients onto private land.

From Noxious Plant Management Alternatives 1 (Current), 2, 3, and 4 (Preferred):

No impacts to recreation anticipated.

From Paleontological Resources Management

Alternative 1 (Current), 2 and 3:

Casual invertebrate fossil specimen collectors would not be required to obtain a permit which would provide additional recreational opportunities in the watershed and be a positive impact to recreation.

Alternative 4 (Preferred):

The removal of any significant finds by authorized facilities could have a negative impact if heavy equipment is used and a road is constructed. An Environmental Assessment should be completed prior to research and recovery efforts.

From Livestock Grazing Management**Alternative 1 (Current):**

From May 1 to July 15 half of the river would not have livestock present. This would provide undeveloped campsites (riparian areas) that would be free of livestock during the float season which would reduce recreation /livestock conflicts and be a positive impact to recreation. During hunting season either the West or East pastures would have no livestock during the hunting season. That should reduce hunter/livestock conflicts and be a positive impact to recreation.

Alternatives 2 and 4:

These alternatives establish riparian pastures on the river which would allow livestock in one riparian pasture from May 1 to June 15 while there would be no livestock in the other pasture. During the float season from June 15 to freeze up there would no livestock on the river. This would eliminate livestock from primitive camping areas (riparian areas) during the float season. These alternatives would have the least livestock/recreation conflicts and would have the most positive impact to recreation of all the alternatives.

Alternative 3:

This alternative would allow livestock to graze along the entire length of the UMNWSR in the watershed during entire the float season. This would result in floater/livestock conflicts and a negative impact to visitors as there would be no primitive campsites (riparian areas) free of livestock.. Livestock would be present in the majority of the watershed during the hunting season which could cause livestock/hunter conflicts and be a negative impact to recreation.

9. IMPACTS TO VISUAL RESOURCES**From Motorized Vehicle Management****Alternative 1 (Current), 2, 3 and 4 (Preferred):**

The use of small signs for road designations would have a minimal negative impact on the visual quality, particularly in the class I classification of the watershed.

Closing and restricting vehicle access will reduce the number of vehicles that will be used in the watershed resulting in a positive impact on the natural visual quality.

From Wood hawk Botton Recreation Area**Alternative 1 (Current), and 3:**

The pit toilets at the upper and lower campgrounds do not conform to the color and texture of the surrounding landscape and from a distance will draw attention causing a negative visual impact.

Alternative 2 and 4:

The concrete vault toilet at the lower campground will have a color and texture commensurate with the surrounding landscape with a low level of change and will not attract the attention of the casual observer.

From Hunting Outfitter Management and Noxious Plant Management**Alternative 1 (Current), 2, 3 and 4:**

No impact to visual resources anticipated

From Paleontological Resources Management**Alternative 1 (Current), 2 and 3:**

No impacts to visual resources anticipated

Alternative 4 (Preferred):

Excavation of fossils and roads built to remove the fossils would change the characteristic landscape and would attract attention. If such work occurred in the UMNWSR corridor, this would exceed the scenic quality sensitivity for the VRM Class I resulting in a negative impact to the visual resources. Therefore such activity would not occur in the corridor without a site specific Environmental Assessment.

From Livestock Grazing Management**Alternative 1 (Current):**

The fence required to separate the east and west pastures along the river would have a minimal negative impact. but the level of change would be minimal and would not attract attention.

Alternative 2 and 4 (Preferred):

The 12 miles of wire fence which could have a negative impact on visual quality. To minimize this impact the fence location will be such that it will not be silhouetted on the skyline and will fit into the landscape like other existing fences in the watershed. The use of helicopters to construct the fence will eliminate the use of wheeled vehicles and construction roads.

Alternative 3:

No impacts to visual resources anticipated

10. IMPACTS TO WILDERNESS**From Motorized Vehicle Management****Alternative 1 (Current), 2, 3, and 4 (Preferred)**

ORV management in all alternatives would benefit wilderness values to the same degree because spur roads would be closed.

From Wood hawk Botton Recreation Area, Hunting Outfitter Management, Noxious Weed Management and Paleontological Resources Management - All Alternatives:

No impacts to wilderness values anticipated.

From Livestock Grazing Management

Alternative 1 (Current) and 3:

No impacts to wilderness values anticipated.

Alternative 2 and 4 (Preferred):

The proposed fence would have 3 of 12 miles in the Woodhawk WSA. This would have a negative impact on wilderness quality. However, in combination with the grazing management the fence would provide, vegetative conditions in upland and riparian areas would improve and wilderness values would improve because the rangeland would be protected in a natural condition. The Wilderness IMP allows for livestock developments that do not impair the wilderness quality. To ensure that the wilderness qualities are retained the fence location will be such that it will not be silhouetted on skylines and will fit into the landscape like other existing fences in the watershed. The use of helicopters to deliver materials and minimal use of ATVs during construction will eliminate the construction roads and any significant adverse impacts.

11. IMPACTS TO WILD AND SCENIC RIVERS

From Motorized Vehicle Management, Woodhawk Bottom Recreation Area, Hunting Outfitter Management, Paleontological Resources Management, Livestock Grazing Management and Noxious Plant Management - All Alternatives:

None of the proposed actions under any alternative would adversely affect the qualities or resources for which the Upper Missouri River was designated as a component of the Wild and Scenic Rivers system.

12. IMPACTS TO ECONOMIC/SOCIAL CONDITIONS

From Motorized Vehicle Management

Alternative 1 (Current), 2, 3 AND 4 (Preferred)

Although there may be a shift in the type of hunting activity occurring on BLM lands in the watershed to relatively more walk in hunting, the impacts to economic conditions in the planning area would be negligible.

From Wood hawk Bottom Recreation Area

Alternative 1 (Current), 2 and 3:

No impact to economic conditions anticipated.

Alternative 4 (Preferred):

Economic activity associated with recreation area development at Woodhawk Bottom could impact local economic conditions primarily in retail trade and services, however this impact is expected to be minimal.

From Hunting Outfitter Management

Alternative 1 (Current) and 3:

No impact to economic conditions anticipated.

Alternative 2 and 4 (Preferred):

Some impact to local economic conditions could be anticipated in the future due to restrictions on

outfitter numbers and days. This impact would come about if there was a greater demand to outfit in the watershed in the future.

From Noxious Plant Management

Alternative 1 (Current), 2, and 3:

Some impact to the agricultural economy could be expected as noxious plants continue to replace native forage species and less livestock could be grazed in the watershed.

Alternative 4 (Preferred):

The agricultural economy would remain static or increase as noxious plants are controlled and replaced by native forage species.

From Paleontological Resources Management - All Alternatives

No impact to local economic conditions would be expected.

From Livestock Grazing Management

Alternative 1 (Current), 2, 3 and 4 (Preferred)

Impacts are essentially the same as described under impacts from each alternative to livestock grazing from livestock grazing management.

V. CONSULTATION AND COORDINATION

The BLM interdisciplinary team which analyzed and prepared the alternatives for this environmental assessment includes:

Jim Sparks - Ecosystem Management Specialist (Team Leader)
Buck Damone - Outdoor Recreation Planner
Mike Montgomery - Civil Engineer
Joe Frazier - Hydrologist
Michelle Williams - Wildlife Biologist
John Park - Archaeology Technician
Gary Warfield - Geographic Information Specialist

Vicki Ehlert (permittee), Tom Ford (ranch manager) and Tom Stivers, Wildlife Biologist with Montana Department of Fish, Wildlife and Parks provided input for alternatives and participated in many team meetings.

Complete records of team meetings are available for review in the Judith Resource Area office in Lewistown, Montana.

APPENDIX A
SUCCESSIONAL STATUS OF RIPARIAN COVER TYPES ALONG THE
MISSOURI RIVER IN THE WOODHAWK AREA *

RIPARIAN COVER TYPE	ACRES	% TOTAL	RIPARIAN TYPE
Seedling stage of cottonwoods and/or willows co-dominates the site.	113	7.5	A
Sapling stage of cottonwoods and/or willows co-dominates the site.	8	.5	A
Pole stage of cottonwoods dominates the site. Green Ash, boxelder or peach-leaf willow may also be present.	4	.4	A
Mature stand of cottonwoods with a closed overstory. Understory dominated by various tree and/or shrub species.	20	1.3	B
Mature stand of cottonwoods with open overstory. Understory dominated by various tree and/or shrub species.	31	2.0	B
Mature stand of cottonwoods with an open overstory and understory dominated by herbaceous species.	54	3.6	C
Decadent stand of cottonwoods with an understory dominated by various tree or shrub species.	20	1.3	D
Decadent stand of cottonwoods with an understory dominated by herbaceous species.	7	.5	E
Green ash dominates site, although other tree species may be present.	3	.2	F
Boxelder dominates the site, although other tree species may be present.	2	.1	G
Peach-leaf willow dominates the site, although other tree species may be present.	14	.9	H

APPENDIX A (cont.)
**SUCCESSIONAL STATUS OF RIPARIAN COVER TYPES ALONG THE
MISSOURI RIVER IN THE WOODHAWK AREA ***

RIPARIAN COVER TYPE	ACRES	% TOTAL	RIPARIAN TYPE
Sandbar willow dominates the site, although young trees may be present.	144	10.0	I
Silver sagebrush dominates the site. Trees are essentially absent from the site.	571	38.0	J
Western snowberry dominates the site and trees are absent or essentially so.	46	3.1	K
Site co-dominated by woods rose and western snowberry. Trees are absent or essentially so.	52	3.5	L
Western wheatgrass dominates the site and trees/shrubs are absent or essentially so.	52	3.5	M
Agricultural land, including farm buildings, cropland, seedings or fallow.	89	6.0	N
Barren land such as gravel bars, cobble bars, etc. not including agricultural land.	12	.8	O
Mixed herbaceous species dominate the site and trees/shrubs are absent or seedlings may be present, but herbaceous species including common "weedies" or "invaders" dominate	255	17.0	O

* - See **Inventory, Classification, and Management of Riparian Sites Along the Upper Missouri National Wild and Scenic River (Hansen 1989)** for a more complete description of Riparian Types and Riparian Cover Types.

APPENDIX A (cont.)
SUCCESSIONAL STATUS OF RIPARIAN COVER TYPES ALONG THE
MISSOURI RIVER IN THE WOODHAWK AREA *

A - Refers to those riparian types that represent an early seral stage of Great Plains Cottonwood/Red Osier Dogwood Community Type; however, if these sites become severely disturbed resulting in the elimination of shrubs, they will convert to the Great Plains Cottonwood/Kentucky Bluegrass Community Type.

B - Great Plains Cottonwood/Red Osier Dogwood Community Type

C - Great Plains Cottonwood/Kentucky Bluegrass Community Type

D - Depending upon the degree of disturbance, these sites may represent any one of the following: Green Ash/Common Chokecherry Habitat Type, the Boxelder/Common Chokecherry Habitat Type, the Silver Sagebrush/Western Wheatgrass Habitat Type, the Woods Rose Community Type, or the Western Snowberry Community Type.

E - Is successional to the Kentucky Bluegrass Community Type or the Western Wheatgrass Riparian Site Type depending upon the degree of disturbance.

F - Green Ash/Common Chokecherry Habitat Type.

G - Boxelder/Common Chokecherry Habitat Type.

H - Peach-leaf Willow Community Type.

I - Sandbar Willow Community Type.

J - Silver Sagebrush/Western Wheatgrass Habitat Type.

K - Western Snowberry Community Type.

L - Western Snowberry or Woods Rose Community Type.

M - Western Wheatgrass Riparian Site Type.

N - Unknown

O - Represents a site in the earliest stages of succession. Close observation of both site and vegetational characteristics may indicate possible successional status and trend.

APPENDIX B
FUNCTIONAL STATUS AND TREND OF RIPARIAN AREAS
ALONG THE MISSOURI RIVER IN THE
WOODHAWK AREA

RIVER MILE(S)	TOTAL MILES	TOTAL ACRES	POLYGON	STATUS	TREND
112.0 - 112.4	.4	50	2093 - 2101	FAR*	Down
112.4 - 112.9	.5	-	None	NR*	N/A
112.9 - 114.7	1.8	166	2102 - 2114	NF*	Static
114.8 - 115.4	.6	-	None	NR	N/A
115.4 - 116.1	.7	35	2123,2124 2125,2130	FAR	Static
Islands		7	2126 - 2127	UNK*	UNK
116.1 - 117.3	1.2	23	2128, 2129 2139	NF	Static
Island		2	2133	UNK	UNK
117.3 - 119.0	1.7	1	2159	NR	N/A
Island		37	2134 - 2138	PFC*	Static
Island		9	2156 - 2158	PFC	Static
119.0 - 122.5	3.5	247	2165 - 2214	NF	Down
122.5 - 123.2	.7		None	NR	N/A
123.2 - 125.5	2.3	309	2218 - 2256	FAR	Down
125.5 - 125.8	.3		None	NR	N/A
125.8 - 126.5	.7	29	2282 - 2284	FAR	Static
126.5 - 127.4	.9		None	NR	N/A

APPENDIX B (cont.)
FUNCTIONAL STATUS AND TREND OF RIPARIAN AREAS
ALONG THE MISSOURI RIVER IN THE
WOODHAWK AREA

RIVER MILE(S)	TOTAL MILES	TOTAL ACRES	POLYGON	STATUS	TREND
Islands		79	2307 - 2317 2321 - 2325 2332	PFC	Static
Islands		31	2318 - 2320	FAR	Down
127.4 - 128.6	1.2	254	2326 - 2354	FAR	Down
128.6 - 128.8	.2		None	NR	N/A
128.8 - 130.1	1.3	206	2362 - 2372	PFC	Upward
130.1 - 130.9	.8	-	2392	NR	N/A
Island		43	2393 - 2399	FAR	Upward
130.9 - 131.4	.5	19	2400 - 2402	PFC	Static
131.4 - 131.6	.2	10	2404	FAR	Static

* NR = Non - Riparian, NF = Nonfunctioning, FAR = Functioning at risk,
PFC = Properly Functioning Condition.

Totals: **Proper Functioning Cond. W/Upward Trend** - 1.3 mi/206 ac.
Proper Functioning Cond. W/Static Trend - .5 mi (+islands)/144 ac.
Functioning at Risk W/Upward Trend - Only island/43 ac.
Functioning at Risk W/Static Trend - 1.6 mi/74 ac.
Functioning at Risk W/Downward Trend - 3.9 mi (+ islands)/644 ac.
Nonfunctioning W/Static Trend - 3.0 mi/189 ac.
Nonfunctioning W/Downward Trend - 3.5 mi/247 ac.
Non - Riparian (No Rating) - 5.7 mi/0 ac
Islands With Unknown Status - 2 islands/9 ac.

APPENDIX C
Water Sources
Woodhawk West Pasture

Project Name	Location	Number	Year Built	Condition	Reliability	Est. Life (Years)	BLM Cost \$	Comments
Sunshine Watersaver	T23N,R21E SENW 7	444907	1968	Good	Good	18	22052	Reconstructed in 1990
Badlands Reservoir	T23N,R20E SENE 13	444472	1951	Fair	Good	13	322	Small but sound
South Reservoir	T23N,R21E SWNW 17	443937	1970	Good	Good	13	1400	Small but sound
Depression Reservoir	T23N,R21E NWNE 20	444471	1951	Poor	None	0	525	Silted in
Tough Day Reservoir	T23N,R21E NWSE 19	444975	1972	Poor	Poor	3	1492	Nearly full of silt
Winter Reservoir	T23N,R21E NENE 29	444977	1972	Fair	Fair	5	1078	D/S pipe out, but still fair cond.
Unnamed Reservoir	T23N,R20E NWNE 23	None	Unk	Fair	Good	Unk	None	1/2 of dam on BLM, rest private
Unnamed Reservoir	T23N,R21E NESE 19	None	Unk	Unk	Unk	Unk	None	None
Unnamed Reservoir	T23N,R20E NWNW 26	None	Unk	Poor	Poor	Unk	Unk	Nearly full of silt
Unnamed Reservoir	T23N,R20E SESW 26	None	Unk	Poor	Poor	Unk	None	On private land
Unnamed Reservoir	T23N,R21E SWSW 29	None	Unk	Fair	Good	Unk	None	On private land
Unnamed Reservoir	T23N,R21E NESW 18	None	Unk	Fair	Fair	8	None	Unauthorized on BLM. Built w/dozer and is failing
Unnamed Reservoir	T23N,R21E NENE 31	None	Unk	Good	Good	Unk	None	On private land
Unnamed Reservoir	T23N,R20E SWSE 25	444502	Unk	Fair	Fair	Unk	Unk	None
Unnamed Reservoir	T23N,R20E NWSE 36	None	Unk	Good	Good	Unk	None	On private land
Unnamed Reservoir	T23N,R20E NESE 34	None	Unk	Fair	Fair	Unk	Unk	None
Hart Spring Develop	T23N,R20E SESW 35	444540	1961	Poor	Poor	0	300	Trampled in

APPENDIX C
Water Sources
Woodhawk East Pasture

Project Name	Location	Number	Year Built	Condition	Reliability	Est. Life (Years)	BLM Cost \$	Comments
Ridge Watersaver	T23N,R21E NWNW 12	446368	1978	Poor	None	0	12000	To be rebuilt in FY97
Unnamed Reservoir	T23N,R21E SESE 3	None	Unk	Poor	None	0	Unk	Breached
Sunshine Reservoir	T23N,R21E NWSE 9	444429	1944	Poor	Poor/Fair	3	440	Nearly silted in
Breaks Reservoir	T23N,R21E NENW 15	444920	1969	Fair	Fair	13	100	Small drainage
Seep Reservoir	T23N,R21E SESE 10	444931	1970	Fair	Fair	13	1500	Poor late season water
Deweese Watersaver	T23N,R21E NWNW 14	446600	1977	Good	Good	18	29546	Rebuilt in 1992
Deweese Reservoir	T23N,R21E SESW 13	444490	1953	Poor	Fair	8	183	Poor late season water - high silt
Sandpoint Reservoir	T23N,R21E SESE 15	444819	1967	Good	Good	13	11552	Rebuilt in 1994
Wood Pit Reservoir	T23N,R21E NWNE 21	447857	1981	Good	Good	18	6590	Can be used yearlong
Woodhawk Watersaver	T23N,R21E SWNE 28	448996	1981	Good	Good	18	15973	None
Bull Reservoir	T23N,R21E NWSW	444964	1971	Good	Good	13	5642	Rebuilt in 1994
Hawk Watersaver	T23N,R21E SWSW 25	A136	1984	Good	Good	18	14730	None
Alkali Reservoir	T23N,R21E NWNE 25	444962	Unk	Unknown	Unknown	Unk	Unk	None
Clay Reservoir	T23N,R21E SWSE 22	444919	Unk	Poor	None	0	Unk	Abandoned
Unnamed Reservoir	T23N,R21E SESE 28	None	Unk	Unknown	Unknown	Unk	Unk	None
Ford Reservoir	T23N,R21E SWNE 26	444855	1966	Poor	None	0	Unk	Abandoned
White Pit	T23N,R21E SESE 27	447856	1983	Poor	None	0	2039	Inadequate drainage

**APPENDIX D
T&E SPECIES
WOODHAWK WATERSHED (2-96 USFWS listing)**

Listed Species

Peregrine falcon (<i>Falco peregrinus</i>)	Endangered
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Threatened
Black-footed Ferret (<i>Mustela nigripes</i>)	Endangered
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	Endangered
Mountain plover (<i>Charadrius montanus</i>)	Candidate
Swift fox (<i>Vulpes velox</i>)	Candidate
Sicklefin chub (<i>Macrhybopsis meeki</i>)	Candidate
Sturgeon chub (<i>Macrhybopsis gelida</i>)	Candidate

BLM Species of Special Concern- Animals

Mamamals

Black-tailed prairie dog (*Cynomys ludovicianus*)
 Merriam's shrew (*Sorex merriami*)
 North American Lynx (*Felis lynx*)
 Preble's shrew (*Sorex prebeli*)
 Spotted skunk (*Spilogale putorius*)
 Swift fox (*Vulpes velox*)
 Townsend's big-eared bat (*Plecotus townsendii*)

Birds

Baird's sparrow (*Ammodramus bairdii*)
 Black tern (*Chlidonias niger*)
 Canvasback duck (*Aythya valisineria*)
 Ferruginous hawk (*Buteo regalis*)
 Hairy woodpecker (*Picoides villosus*)
 LeConte's sparrow (*Ammodramus leconteii*)
 Loggerhead shrike (*Lanius ludovicianus*)
 Long billed curlew (*Numenius americanus*)
 Mountain plover (*Charadrius montanus*)
 Northern Goshawk (*Accipiter gentilis*)
 Swainson's hawk (*Buteo swainsoni*)
 Three-toed woodpecker (*Picoides trida ctylus*)
 Trumpeter swan (*Cygnus buccinator*)

Reptiles

Snapping turtle (*Chelydra serpentina*)
 Spiny softshell turtle (*Trionyx spiniferus*)

Fish

Paddlefish (*Polyodon spathula*)
 Blue sucker (*Cycleptus elongatus*)
 Northern redbelly X Finescale dace (*Phoxinus eos* X *Phoxinus neogaeus*)

**APPENDIX E
RECORDED CULTURAL RESOURCES
WOODHAWK AREA**

1. 24FRP008 - Lewis & Clark Campsite/Woodhawk Camp - Historic - Missouri River bottom
2. 24FR402 - Nelson Homestead - Historic - Missouri River bottom.
3. 24FRP10 - DeWeese Homestead - Historic - Missouri River bottom.
4. 24FRP15 - Frizelle Homestead - Historic - Missouri River bottom.
5. 24FR650 - Sturgeon Island - No record of site type- Missouri River bottom.
6. 24FRP9 - Middleton Homestead - Historic - Missouri River bottom.
7. 24FR329 - Cabin Rapids/Smith Homestead - Historic - Missouri River bottom.
8. 24FR93 - Whitedam - Prehistoric - Uplands.
9. 24FR96 - Duhl - Prehistoric - Uplands.
10. 24FR97 - Woodpit - Prehistoric - Uplands.
11. 24FR233 - No name - Prehistoric - Uplands.
12. 24FR234 - No name - Prehistoric - Uplands.
13. 24FR240 - No name - Prehistoric - Uplands.
14. 24FR270 - No name - Prehistoric - Uplands.
15. 24FR282 - No name - Historic(homestead) - Uplands .

APPENDIX G
PALATABLE HERBACEOUS RIPARIAN AND UPLAND SPECIES FOR STUBBLE HEIGHTS
AND PRESCRIBED UTILIZATION LEVELS AT KEY AREAS
ON THE UMNWSR AND WOODHAWK CREEK

SPECIES	WETLAND STATUS ¹	PALATABILITY (CATTLE) ²
<i>Agropyron repens</i> (quackgrass)	FACU	Good
<i>Agropyron smithii</i> (western wheatgrass)	FACU	Good
<i>Agrostis stolonifera</i> (redtop)	FACW	Fair
<i>Beckmannia syzigachne</i> (American sloughgrass)	OBL	Good
<i>Bromus inermis</i> (smooth brome)	FAC	Good
<i>Calamagrostis canadensis</i> (bluejoint reedgrass)	FACW	Good
<i>Carex aquatilis</i> (water sedge)	OBL	Good
<i>Carex micoptera</i> (small-winged sedge)	FAC	Fair
<i>Carex nebrascensis</i> (Nebraska sedge)	OBL	Good
<i>Carex rostrata</i> (beaked sedge)	OBL	Fair
<i>Deschampsia cespitosa</i> (tufted hairgrass)	FACW	Good
<i>Distichlis spicata</i> (inland saltgrass)	FACW	Fair
<i>Eleocharis acicularis</i> (needle spike-rush)	OBL	Fair
<i>Elymus canadensis</i> (Canada wildrye)	FAC	Fair
<i>Elymus cinereus</i> (basin wildrye)	FACU	Good
<i>Glyceria striata</i> (fowl mannagrass)	OBL	Good
<i>Juncus balticus</i> (Baltic rush)	OBL	Fair
<i>Phalaris arundinacea</i> (reed canarygrass)	FACW	Good
<i>Phragmites australis</i> (common reed)	FACW	Fair
<i>Poa palustris</i> (fowl bluegrass)	FAC	Fair
<i>Poa pratensis</i> (Kentucky bluegrass)	FACU	Good
<i>Puccinellia nuttalliana</i> (Nuttall alkaligrass)	OBL	Fair
<i>Scirpus acutus</i> (hardstem bullrush)	OBL	Fair
<i>Scirpus maritimus</i> (alkali bullrush)	OBL	Fair
<i>Scirpus pungens</i> (sharp bullrush)	OBL	Fair
<i>Spartina pectinata</i> (prairie cordgrass)	OBL	Good

¹ - OBL (obligate wetland), FACW (faculative wetland), FAC (faculative), FACU (faculative upland)

² - Good = highly relished and consumed, Fair = moderately relished and consumed